THE SPECTRUM SHOW
Magazine

ROBOTRON SHOOTOUT
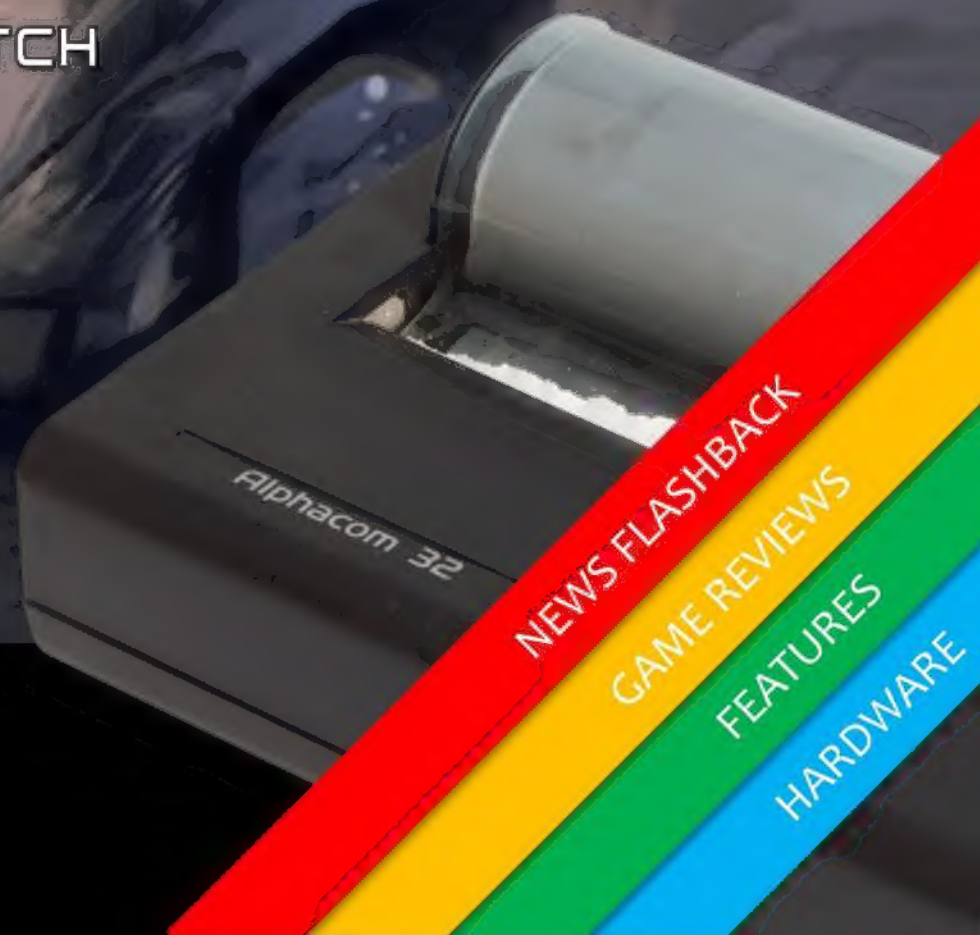## CLONES GO HEAD TO HEAD

ALPHACOM 32
ZX PRINTER WITH MORE SCRATCH

PLUS:
PLAY MANCHESTER 2019
ZXBOX
MIND YOUR LANGUAGE

Includes material not in
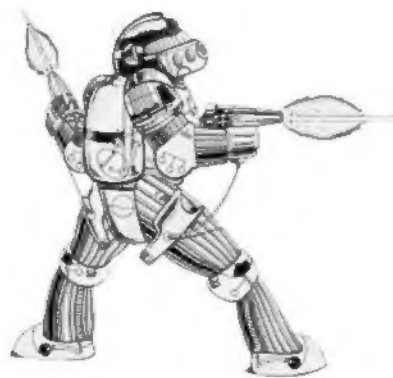the show

NEWS FLASHBACK
GAME REVIEWS
FEATURES
HARDWARE

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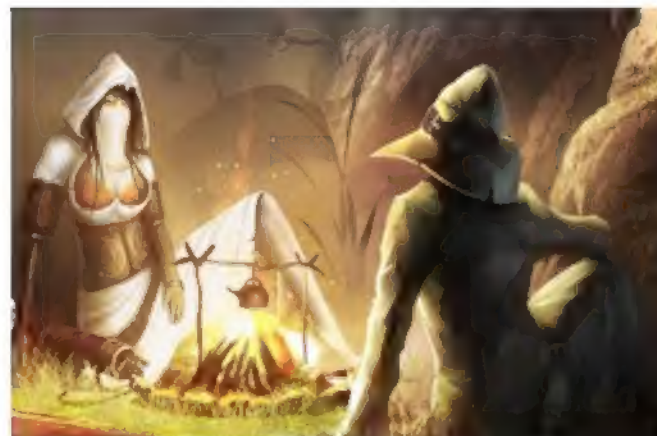
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EDITORIAL

Welcome to issue 25 of The Spectrum Show Magazine. Thank you for downloading and reading.

It seems the last issue caused some problems for readers and, I must admit, it caused me a few headaches as well. Some reported the PDF view was not working correctly, others said the page size was not suited to printing or viewing on some devices. With this in mind, I have moved back to MS Publisher and re-built all the templates.
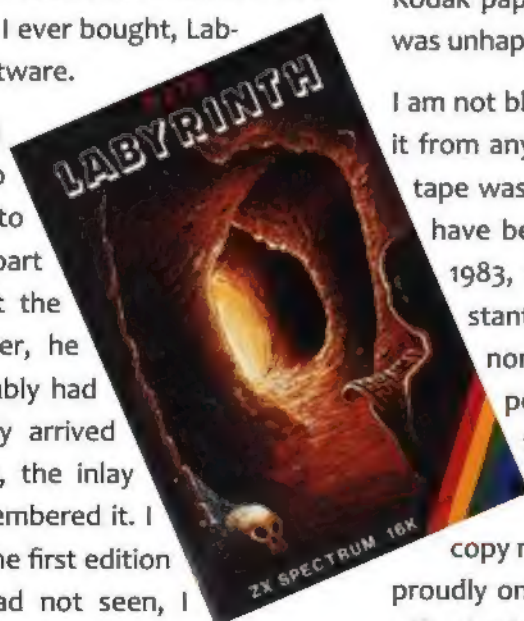
That is not to say that Affinity Publisher is bad, on the contrary, it is an excellent package, but for now, and to help me keep the magazines coming out, I'll stick to Publisher. If you have any comments or problems with this issue, please let me know.

Onto all things Spectrum then

There are times when you, as an aging Spectrum fan, or in other areas as well, start to question your knowledge and memories. Recently I obtained a game from eBay. The game was to replace one lost, and one that had strong memories connected to it. It was one of the first two games I ever bought, Labyrinth from Axis Software.

I lost my original tape a few years ago and always tried to get my friend to part with his, bought at the same time. However, he refused, so I inevitably had to buy one. It duly arrived and, to my dismay, the inlay was not how I remembered it. I don't mean it was the first edition or it was one I had not seen, I meant the actual physical inlay.

Let me paint a picture for you. Back in 1983 I eagerly brought home two games. The first I had bought for my new Spectrum. Gobbleman by Artic Computing and Labyrinth. As they loaded, I read the inlay in great detail. I knew the inlay back to front, but this newly obtain version was nothing like it.

My original (and that of my friends) was printed on the normal cardboard. A nice picture on the front and loading instructions and game instructions on the back, just like every other game I bought since. The new one though was printed on (what I would call) modern photo/inkjet paper. It even had the Kodak logo watermarked onto the back. It also came with a small card on which was printed the instructions.

I pondered this for a while. I tried to locate the date when Kodak produced this kind of paper, but failed. I compared it to my friends copy. I viewed other versions in various online stores, and none looked like they were printed on Kodak paper.

I even ordered another copy of the game, and this one was printed on the usual cardboard. So, what was this thing I had been sent?

I contacted the seller and warned him that he may have bought, or been given a fake, in case he had a lot of other titles from the same source. He kindly replied saying his memory of games indicated some of them were printed on Kodak paper. He also offered me a refund if I was unhappy.

I am not blaming him for this, he may have got it from anywhere, but I still feel the inlay (the tape was fine) was a modern reproduction. I have been buying games from shops since 1983, often 3 per week, and have a substantial collection from 1982 to 1993, and none have inlays printed on Kodak paper with an embedded watermark on the rear.

At least I managed to get another copy matching my memories, which will sit proudly on my game shelf once I get the new office back up and running.

Replay Manchester

Onto more positive things, and Replay Manchester.

May 4th and 5th saw the event move to a new home, the previously named GMEX Centre in the middle of Manchester. Living within easy traveling distance, I once again met up with Geoff Neil and had a great time with all the arcade cabs, consoles and games.

The venue was massive, too big in my opinion, and you can read more on page 18.

We did grab an interview with Jim Bagley and discussed the Spectrum Next, as well as getting our hands on one. It was superb, and we both can't wait to get ours when they are ready.

Continuing with the shows and I got along to Revival in Walsall in June for another great event. There were a lot more stalls selling Spectrum games this year and I managed to grab a few bargains and gap fillers.

I also picked up a fantastic piece of art from Retro Draughtsman - an excellent line drawn Speccy. He also did full colour versions and of course other retro things like Megadrives and Amigas.

Sadly he was stopping doing these pictures, which was a shame because they are superb, but I suppose the market is very finite for this sort of thing.

PLUS 3 PRICE CUT

The as yet unreleased Spectrum Plus 3 has already run into trouble, but this time not about the hardware. The big problem for retailers and the public seems to be the price.

Amstrad initially stated that the new machine will sell for £249, a lot higher than the markets anticipated. Pressure also came from the newer 16 bit machines being reduced, like the Atari 520 STFM dropping to £299. Considering the hardware difference, Amstrad's price doesn't justify the technology gap.

Amstrad though, are refusing to drop the price, at least for now, but may have to reconsider if they want to sell units to the public who are being lured by the 16bit machines.
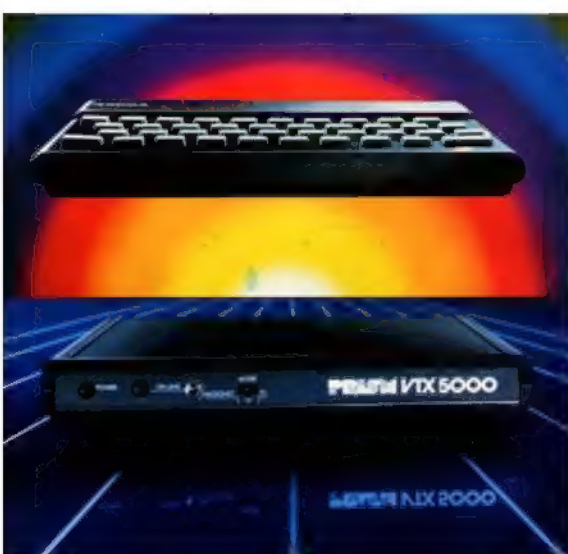
COMP GAMER CLOSES

Computer Gamer magazine has folded after a very short run. Despite Argus Press trying to save it with a relaunch four months ago, their efforts were in vain and things have not go well for the multi-format games magazine.

Selling only 23,000 copies per month on average, they just could not compete with the likes of Crash, who were selling over 90,000.

VTX UPGRADE

Owners of the Prism VTX 5000 modem often had issues using the device, with troublesome connections and refusal to do what it was supposed to. Now though, you can get rid of all your problems with a new ROM upgrade from Spectre Communications.

The upgrade allows the modem to work with all models of the Spectrum, unlike the original one, and also comes with built-in terminal software to allow you to access text only, scrolling bulletin boards.

The upgrade will cost you £22.94.

MACSEN CLOSE

Macsen, surely you remember them, right? Remember that awful Eastenders game? Well Macsen wrote that along with several other television tie-ins such as Blockbusters and Treasure Hunt.

However, having now remembered them, you might as well forget them, as they have gone into liquidation.

OUTRUN

US Gold have announced they have won the licence to produce the computer version of the popular arcade racer, Outrun. Having already put out other arcade conversions, they are confident that they can do the game justice, even on the Spectrum.

INFOCOM +3

Activision has acquired the rights to Infocom's back catalogue of adventure games. Popular in the USA, Infocom were responsible for some classic text adventures including Zork and Planetfall.

With the rights now with Activision, it has been rumoured that discussions have taken place as to whether the new Spectrum +3 machine might be a lucrative platform to put out all of those lovely games.

So far there has been no official announcement, but the adventuring Spectrum world are keeping their fingers crossed.

SAUCY

The Currah Microsource has had a bit of a journey. After Currah went bust the device was taken over by Quadd House, with a view to keep the device available, but sadly nothing ever came of that little project. Now the device has moved again, this time being marketed by Simons Electronics.

The device is again available to purchase for £19.95, and is a small peripheral containing a built-in FORTH programming language and an assembler.

SQUARES

KAS29 - 2019

This is a very interesting idea, very simple, very well implemented and yet very addictive. Although written using Arcade Game Designer, this breaks the mould and moves away from the usual platform game often made with this great tool.

The idea is to identify the coloured square that is not bright, move your cursor over it and click. Sounds easy you might think!

Things do start fairly easy and the first few levels have large squares. Spotting the non-bright square is easy, at least for most colours. Dark blue can sometimes be tricky.

As the game moves on there are bonus levels to get more time and once past these, the squares begin to get smaller as you progress. This makes things even more tricky, especially as the time is running out.

All the way through is a great little tune is playing that suits the game well and make playing it a joy, even if it is against the clock.
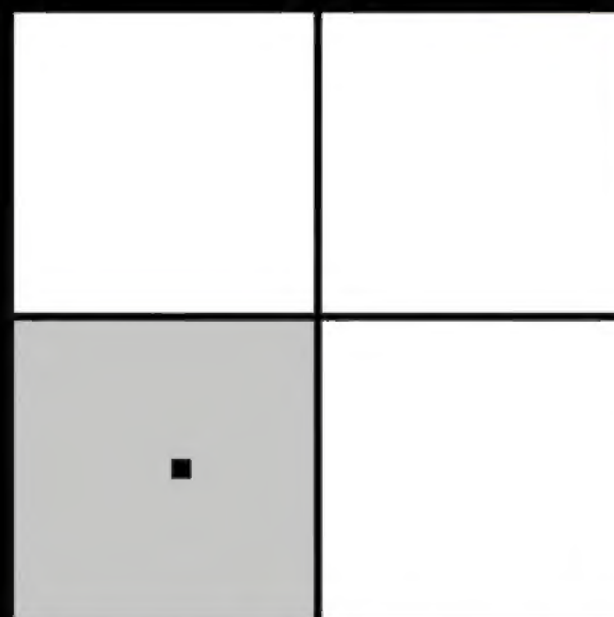
Control is responsive and for such a simple idea, it is very well produced.

This is one of those games that ignores platforms, shooters or other well known formulas and introduces a new dynamic. A great idea, and one surprisingly simple and yet addictive.
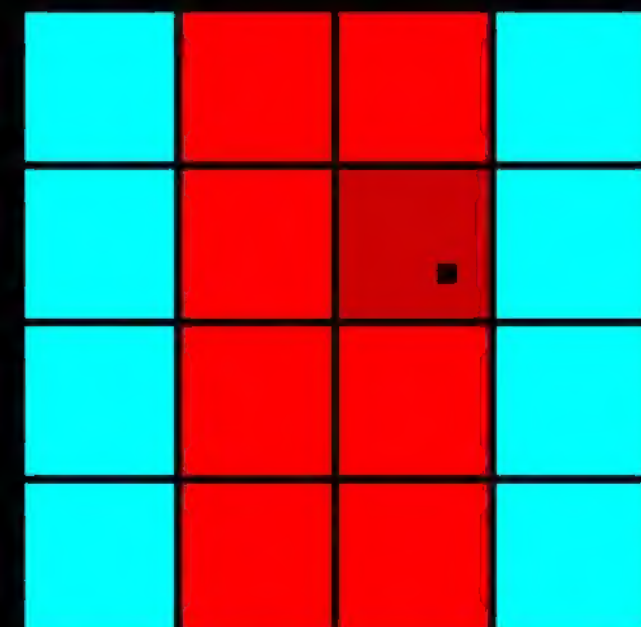
A great game then, definitely worth checking out.
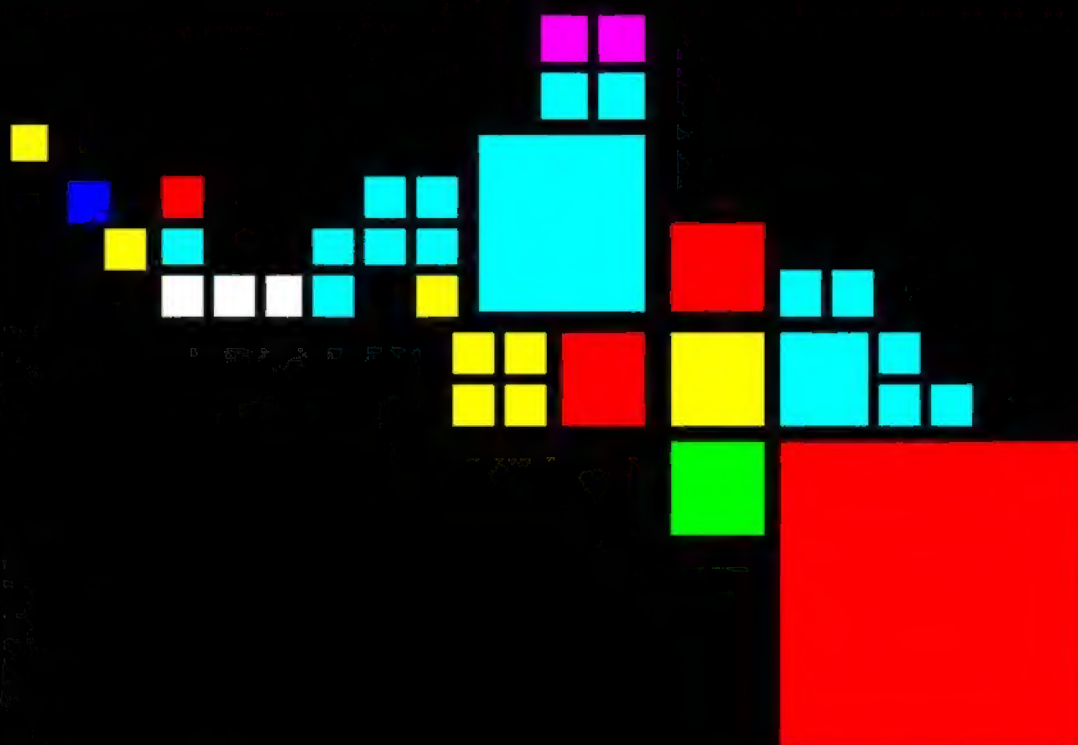
DISCS OF DEATH

Artic Computing 1985

No prizes for guessing which film this game is based on - yes, it's Tron.

This game takes the disc fight section and throws you into the game with another competitor in a kill or be killed situation.

The graphics, although simple, move really well, and the animation is great. You control the man nearest, and you jump across the platforms trying to avoid the discs thrown at you. The jump is automatic, so all you have to do is move to the edge of the platform and you will jump to the next one.

To throw your own disc, you press the up key, and your disc heads off towards the other player. You can throw three discs at once, so you can fire a salvo and jump clear of the oncoming player-thrown discs. Your discs come back to you on their own, and you can't throw again until they do. You can also deflect the opponents disc by press the down key, but only a limited number of times.

You have to keep moving, and it's a fast-paced game. After a few games I noticed something not mentioned in the instructions and also that makes the game harder in my opinion. Pressing and holding the fire key moves a small bar left or right around the back panel. Press and hold once and it move right, release and press again, it moves left. This is the target your discs will head towards, so you can use it to bounce discs off the walls. However, you spend so much time trying to use this to line up shots, you can't simultaneously watch the opponent and his discs, so this does add another level, but also makes it much more tricky.

The graphics look good and the 3D effect works quite well, despite being simple. Sound is used adequately, but could have been better in my opinion. Having said that, it does work with the game.

I really enjoyed this game, it was fun to play and provides a nice challenge. Things get harder as the levels progress, with homing missiles coming into the action, which cannot be avoided, which have to be shot, again very tricky.

I am not sure if there is an actual end to the game, so I used an infinite life poke and played for ages and there didn't seem to be one.

A nice challenging game and worth a quick play.

Robotron was a classic arcade game released in 1982 by Williams. Alongside Defender, by the same company, this frantic shooter was one of the first to give the player twin joysticks. One to move with, the other to shoot.

A great mechanism once you got used to it, but one that would be difficult to adapt for the Spectrum where a single joystick or keys were the norm.

The player controls a superhuman hero trying to save the last remaining humans from the evil robots that have taken over the world. To do this, he must shoot any robots that can be destroyed and for bonuses, save each human on-screen by bumping into them. The robots vary, with some shooting back, some invincible and others that spawn more robots.

The arcade game could handle hundreds of sprites, flooding the screen with moving, animated robots. This would be a tall order for the Spectrum indeed.

Fast action and iconic sounds would be difficult to pull off for home machines.. so how did the Spectrum get on?

Score 0

Arena 3000 - Microdeal - 1984

This game varies slightly from the arcade by having no humans to rescue despite it saying this in the advert. This changes it to a shoot and survive game.

Arena 3000 places you in an arena (obviously) inhabited by robots and to progress you have to disable them. I say disable because when you shoot them, they do not explode, but just stop moving. These are then a hazard you have to avoid while still running around trying to survive.

Lining up the shots is tricky because of the placement of the graphics, and you usually have to run around and try a few times before you get a hit. It is quite odd until you learn at what level the robots have to be at before you can hit them.

To add an extra challenge, the walls slowly shrink every few seconds as well.

The graphics are basic and small and move in character squares. Control is crisp, which is a good job considering how fast things move as you get down to the last robot and still have the disabled ones hanging around.

Sound is used well and there are some nice effects here but the gameplay is just too frustrating. Having played for over 30 minutes I never reached the next level if indeed there is a next level.

SCORE-1   000 PHASE 00

Exterminator - Silversoft - 1983

Now here we have a close version of the arcade game. There are robots to destroy and humans to save.

There are different types of robots, some firing, others not, robots you can't destroy and some that shoot back, and all this at a hectic pace.

The graphics are large and you can tell what things are and differentiate between robot types. They move smoothly, even when there is a lot on screen too making for a very arcade like experience.

Control is crisp and you certainly need it in this game.

Sound is well used, but the Spectrum can never match the iconic sounds emanating from a Robotron cab.

As you progress through the levels things get really tough with plenty of dodging and firing. The arcade had separate fire and movement controls so you can move in one direction and shoot in another, here though you are limited to firing in the direction you are moving. This means the game is a bit more tricky, but can be played with a joystick.

A good game then.

Robotron - Krypton Force - 1985

This is another game very close to the arcade machine, but suffers from a very bad key layout, making it tough to play. At least this is the case on a PC keyboard when using emulation.

The game uses Symbol Shift for down and L for up which works well on a real rubber keyed machine, but try using that on a PC keyboard. Your hand will deform into a painful claw and the game will suddenly be less attractive.

Ignoring that for a moment and most of the arcade elements are here. Chasing robots, humans to save and deadly obstacles.

The graphics are small and move in character jumps, but the hectic pace and panic inducing action are all present. Sometimes you don't even notice the graphic movement as you are too busy trying to stay alive.

Sound is used well with some good effects, and some really nice zap sounds that mimic the arcade.

Overall, not a bad game if played on a rubber keyed machine.

Robotron 2084 - Atarisoft - 1984

As you would expect from an official port, the game is very accurate to the arcade version. There is no separate firing and moving though and the firing is on automatic all the time. In effect you just have to run around and avoid things though this is harder than it sounds.

The pace of this game is fast, probably too fast, and that for me meant short games. I wanted to play longer games and to get involved, but just ended losing life after life in quick succession.

The hectic pace means it is difficult to take in everything you see on screen and so find yourself hurtling into robots or other deadly things every few seconds.

This is a bit of shame because the arcade game is not this fast! Once you get to level 3 on this one there are so many things on-screen, it is impossible not to run into them.

The graphics are well defined and move smoothly and the sound is excellent. Control is crisp but the sheer pace of the game does rather spoil things.

A great conversion then, if you have the reflexes of a ninja!

Wild West Hero - Timescape - 1983

The intro screen looks very similar to Robotron 2084 and the same constant firing mechanism is used, which makes sense for a home micro. There is one major difference though, this game is far better to play.

The pace is just that bit slower than the previous games meaning you can progress and get involved in the game. You get engrossed without getting frustrated, and that's important.

In fact the pace I think is spot on and you get enough time to escape the initial charge, manoeuvre around and line up the shots, which is great.

The graphics are well drawn and move smoothly, even with a lot on screen and the action is fast and furious. Quite an achievement for the Spectrum.

Sound is also used very well. With some great effects.

Control is responsive and the overall gameplay feels just right, although by level four things get very hard with very little manoeuvring room.

There are no humans to rescue, so this is just a plain shoot and avoid game but a great one at that, and one I enjoyed playing.

Interesting Note:

There are many similarities between this game and the official release, just take a look at the main character for example, and the shape of the lower parts of the robots.

Dig a little deeper and you may notice that the same person wrote both, Paul Holmes. I presume he used the same engine and just tweaked the graphics. Talking of which, Paul also wrote another game called Dustman. Although having different graphics, it's the same game as Wild West Hero.

So here we have man who wrote one game and sold it three times!

THE WINNER

Well this has been very difficult. The game I enjoyed the most was Wild West Hero without a doubt. Although it had elements of the arcade game missing, I felt this was the best of the bunch for pace and playability.

The official port is arcade accurate, but for me it was just too difficult.

Dustman by the same author as Wild West Hero and the official port.
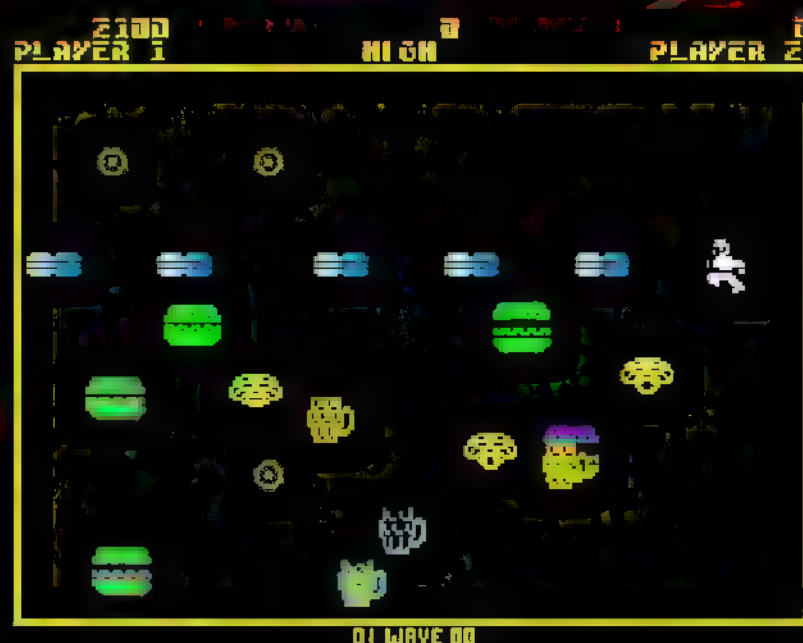
The arcade game for comparison

TAKING ON THE SINCLAIR ZX PRINTER

ALPHACOM 32

There were two main printers for the ZX Spectrum, the official Sinclair ZX Printer and the Alphacom 32. Also known as the Timex 2040 in the US.

Created by Dean Electronics in 1983, it was available as the Spectrum was gaining ground in the home market, and was a viable alternative to the Sinclair offering.

For a rather high price of £99.95, you got a chunky machine that could output 1 line per second and reproduce the full resolution of the Spectrum, at 80 dpi, on a 4-inch-wide roll of paper.

It can connect to either a ZX81 or a Spectrum so it was good for ZX81 owners who were looking to upgrade without having to buy another printer.

The paper isn't like the metalized rolls used in the Sinclair printer, and offers a much better,

and in most cases higher quality, output.

Whereas the ZX Printer used an electric current to evaporate aluminium coated paper, the Alphacom used a thermal printing method. The paper was changed by a heated head, producing black (or blue depending on the paper used) dots that formed the text or graphics.

The device comes with a separate power adapter, with leads long enough to suite most uses.

The edge connector also has a pass-through, but many newer peripherals like the Smart Card are just a little too wide to be used. Instead it was back to the tape recorder.

To set it up, you just plugged it into the Spectrum, connected the power, and turned everything on.

The unit has a nice rounded cover that lifts up and allows you to feed in the paper ready for

use.

There are two buttons on the top, one to switch the printer on that doubles as a line feed button, and one to turn the printer off.

Sinclair's ROM Functions

Sinclair had several print command built into the Spectrum's ROM, so without any further software users could print text or screen dumps with just one keyword.

The LPRINT command mimics the PRINT command, but outputs to the printer rather than the screen.

The LLIST command lists any BASIC code to the printer, ideal for debugging away from the computer.

The COPY command dumps the entire screen to the printer.

Let's look at the text options first.

It is very easy to print text, so no real surprises there. Some adventure games supported the device, allowing you to print out your progress although for long sessions this would use up a lot of paper.

Most word processors too allowed output to the unit, but to be honest, you wouldn't really use it for that. The paper is too small, and it doesn't look very professional. Maybe OK to send your granny a nice thank you note but little else.

The LLIST command was very useful if you wrote your own games. You could easily dump the entire listing and check it over. The quality was very good too and the print speed was impressive for such a compact device.

Graphics

The printer, like all others, would print the INK as a single colour. That means anything blue, red, magenta, white, cyan, yellow or green would come out black. Anything defined as a PAPER colour would not print. This could leave some screens looking very messy.

OK, so not perfect but acceptable you might think.

Printing out some loading screens however, does show up this limitation especially where the artist has used various techniques that mix paper and ink colours. Some loading screen do look fine though.

Luckily help was at hand. Many magazines printed routines that produced a shaded output. They took the ink colours and used different shading to represent them. The output using this method looks much better.

I used a type-in called Shade Copy from Your Computer. The version on WOS is not the same despite claiming to be. It has many changes to the BASIC listing. So I typed it all out again, all 311 bytes of machine code, and now have a working version.

It does just dump out three versions of any loading screen. First the normal ZX Printer black and white version, then an inverse version and finally a shaded version. With a small change however, you can just make it dump the shaded copy.

In operation the printer is not too noisy and prints at a reasonable speed. My little machine needed a few thumps to ensure the line feed was working but the results were certainly readable.

I had one of these in the 80's and it printed out many screen dumps, adventure game sessions and even entire 48k BASIC listing of my games to help me de-bug them. Luckily the paper was not all that expensive.

Looking back at the printouts I kept, some haven't aged that well but others seem like they were printed yesterday. I suppose it depends on the quality of the paper.

I found some interesting printouts from the 80's too, a few from the Micronet 800 Game Shades are especially interesting for me. Sadly, though, I taped them into a page of my diary and this has 'leaked' through, obscuring some of the text.

Overall, this is a great little printer that can easily compete with the smaller Sinclair offering. Given the choice I would take the Alphacom. It used cheaper paper, produced better output, was slightly faster and didn't produce a smell of burning paper when in use.

PAC-MANIA

SPOCK

SCORE
28360
HI-SCORE
100000
CREDITS 1

SCORE
720
HI-SCORE
100000
CREDITS 2
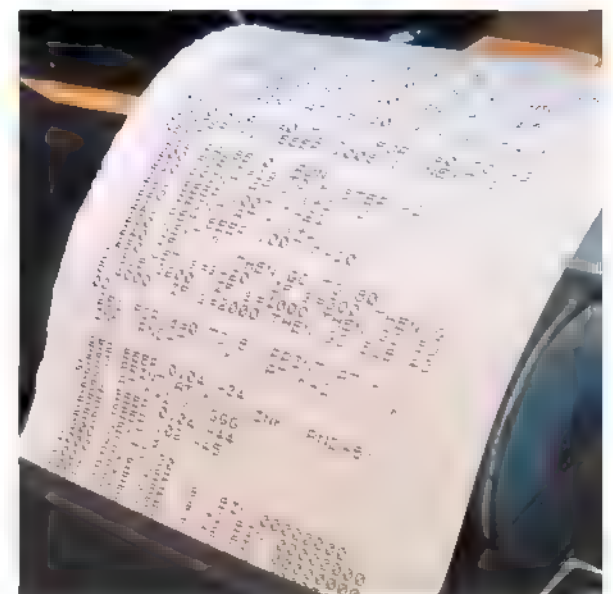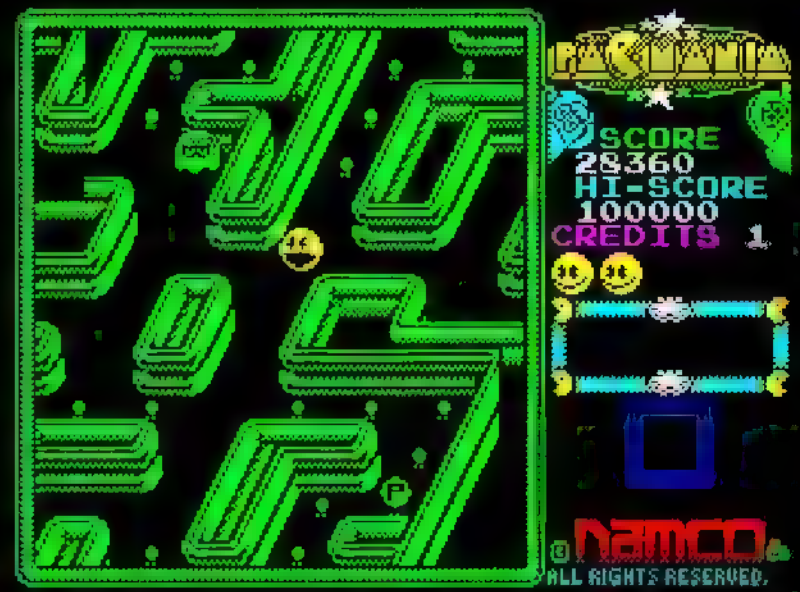
In the late eighties and early nineties many arcade classics were remade using newer and better hardware. Asteroids, Breakout and Space Invaders returned to arcades as Blasteroids, Arkanoid and Super Space Invaders. However, the list of classic games would not be incomplete without Pac-Man. That famous yellow dot eater returned too in Pac-Mania.

The goal of the game, known from the original Pac-Man, remained the same. You are in a maze full of dots which you have to eat. There are also a few ghosts wandering the maze. They look harmless but contact with them is lethal, so it's better to avoid them. Things change for a while when you collect a power pill - The ghosts start to panic and you can catch them. After eating all the dots, the level is completed and another one starts.

In the original Pac-Man every level takes place in the same maze. Pac-Mania extended this to four mazes each of them has a different layout and is built from different material. The biggest change is the quality of graphics. Simple 2D lines on a black background were replaced with 3D isometric walls. Pac-Man and the ghosts are not flat anymore - they can rotate and you can see their front, back and sides. Isometric graphics made a new feature possible - jumping. It's a simple method of avoiding the ghosts. At the beginning it works well but on the later levels it becomes almost useless because the ghosts start to jump too.

Arcade hits were sooner or later converted to home computers and Pac-Mania is no exception. The Spectrum version is very faithful to the arcade original.
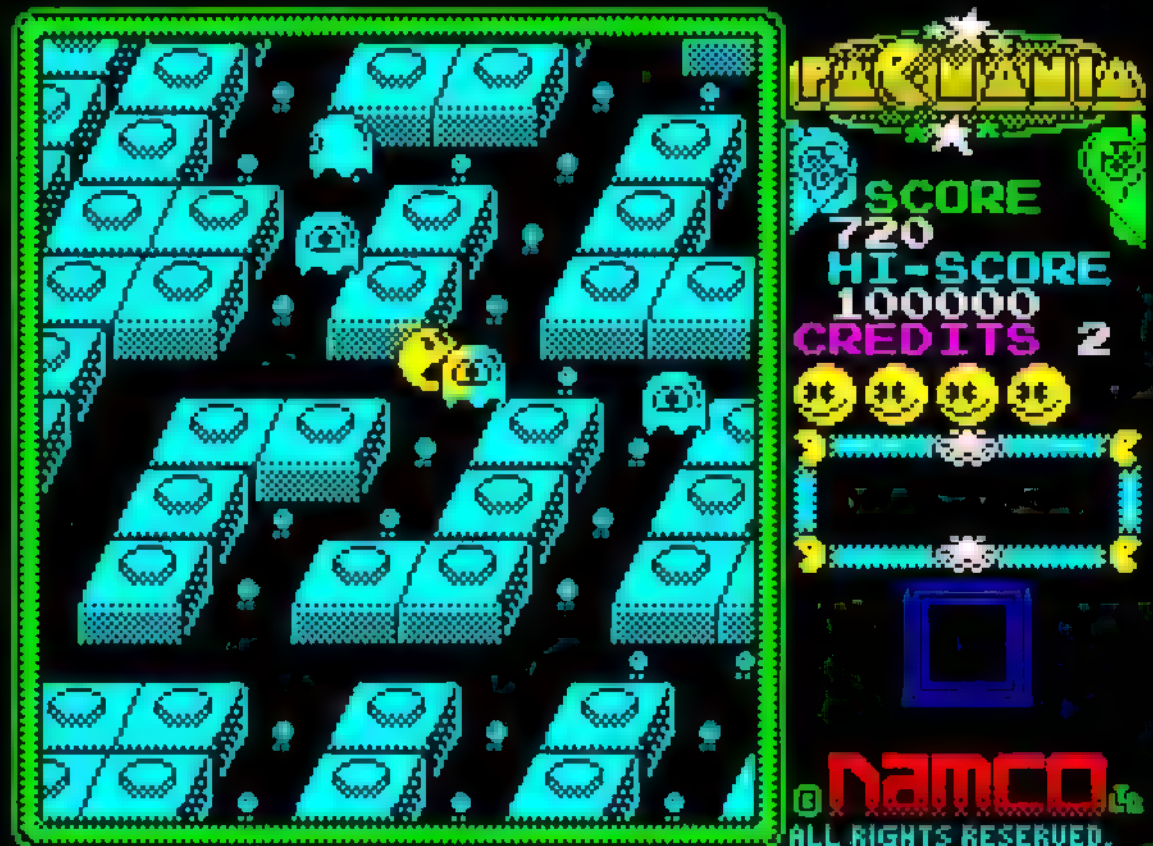
Graphics are very good and move smoothly. Mazes and ghosts are monochrome but Pac-Man is always yellow, which is a nice thing, and colour-clash is minimal. Cut scenes from the arcade version are included and they look great. Sound effects played by the Spectrm's BEEPer are simple but sufficient. On Spectrums with 128k of memory you can also hear nice tunes played by the AY chip.

In my opinion Pac-Mania is one of the best conversions of an arcade game. It's well crafted and very playable. I can recommend it to all players: those who like original Pac-Man and those who don't.

Review by Piotr "PopoCop" Szymanski

EGGHEAD

GOES TO TOWN

Jonathan Cauldwell 2017

Anyone familiar with the Egghead series will immediately feel at home here. Masses of screens to navigate, masses of objects to collect and plenty of platforming action.

The graphics, as usual with Johnathan's games, are well drawn and well animated and move really smoothly.

Control is great too, as you would expect, so any issues with you dying is purely down to your gaming skills.

Some of the jumps are really testing too, and these have to judged just right otherwise it's time for an omelette.

The screen designs vary with references to real places like The Baron Of Beef pub, which is a nice touch. Of course these screens are full of things to avoid if you want to get far in the game. No use just going around admiring the scenery.

To get to other screen you can use ladders or just jump. Beware though, entering a new screen can be deadly, so you have to be ready to avoid moving nasties.

This game uses the height death mechanic, so if you fall too far, you die. I am not a big fan of this, but I know it is the staple of many platform games. It is tricky trying to guess if the fall will kill you on a lot of screen, and you can get frustrated if you have collected all the items and then fall a few pixels too far.

Sound is good, with a series of nice tunes for different elements of the game like entering a new area or collecting objects, but nothing for walking or jumping.

For platform fans then, this is a mammoth game with loads of rooms just waiting to be discovered. One room did generate a lot of discussion though, the Vega+ Production Line. I'll leave you to seek out the forums and find out for yourself what that was all about.
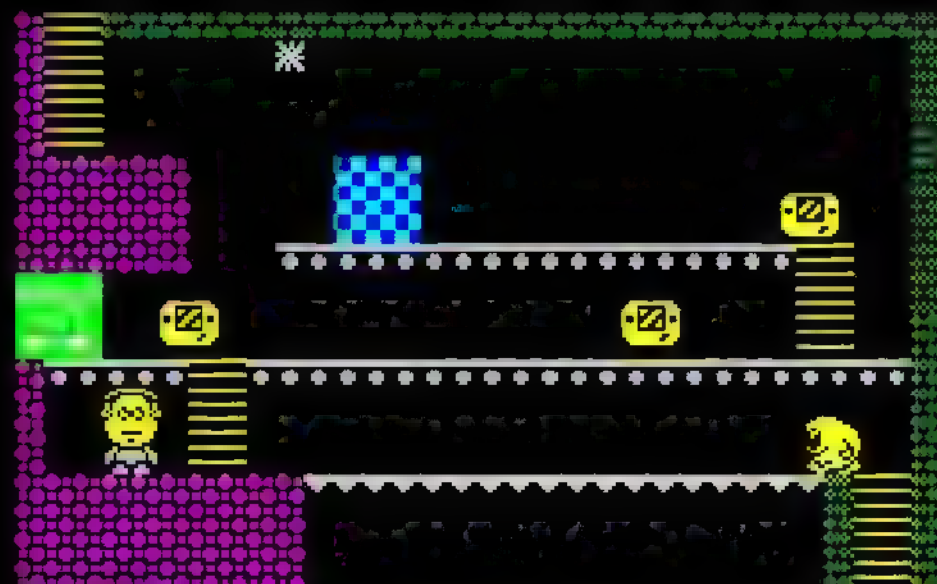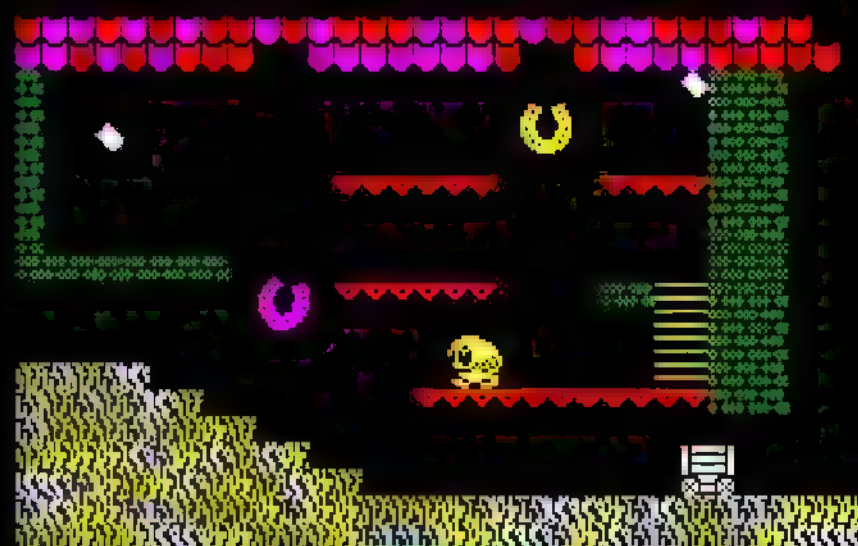
MADHATTER

Automata UK 1985
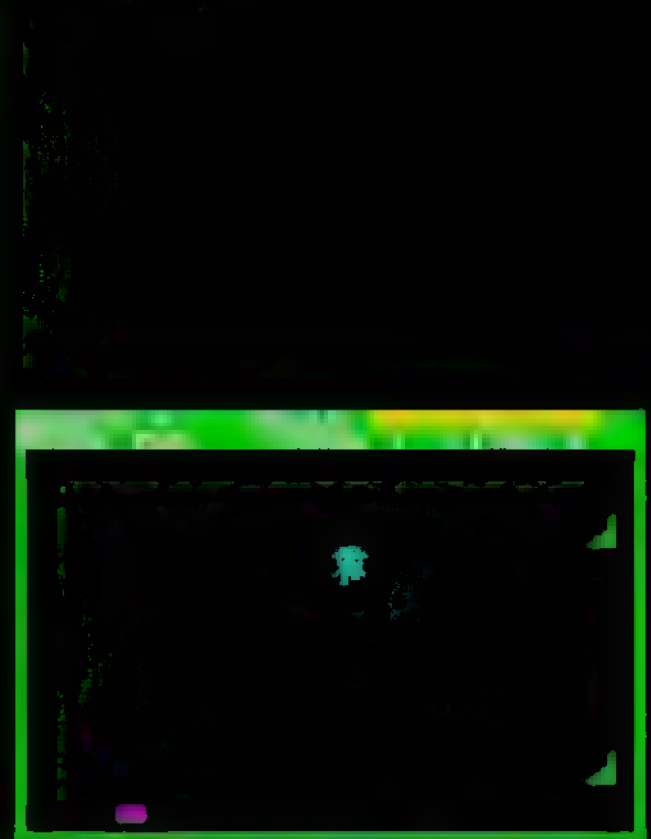
Automata usually put out fun games, and games with no death and this one matches that criteria.

The story goes that it's the Mad Hatter's birthday and all his friends are coming to tea, but he hasn't got enough sweets. You have to guide him around collecting sweets and avoiding various nasties.

The single screen contains hoovers on the left that continually move up and down, and will kill the hatter if he touches them. They have a powerful suction and can drag the poor hatter to his death. There are also the mice. These run across the screen randomly and can eat the sweets before the Hatter gets to them.

There is also a plug that can stop the hoovers and poison that doesn't really do much.

The sweets appear at random around the screen and you just guide the Hatter to collect them. There is a chocolate roll at the bottom of the screen that can also be collected sometimes, but not always, and it seems you have to have collected enough sweets first. Once you have a chocolate roll, you then have to take it to the top of screen to complete the level.

The graphics are fairly basic and move in character squares, and the animation in limited to just two frames. Control is good, allowing you to get the Hatter out of tight spots easily.

The random appearances of mice does get really annoying, and the poison always generates at the same height as the Hatter, so you have to keep moving.

Sometimes if you are fairly fast at collecting the sweets you can have an empty screen for over 6 seconds, which is a bit odd, and you just sit there dodging the mice and poison.

Sounds includes some machine code effects but also some plain BASIC beeps, so a bit of a mixed bag.

Overall it's a typical game for the early part of the Spectrum's life, but I think for 1985, it should have been better.

DEVIL DIVER

DK'Tronics 1984

This early game from DK.Tronics has elements of several others all rolled into one great pick-up-and-play experience. There are elements of Jetpac, Defender, Glug Glug and Pipemania – what a mash up..

The idea is you have to repair an undersea pipeline that runs across the bottom of the sea bed. To do this you have to jump out of your ship, position yourself over an area that needs a segment of pipe, and drop it into place.

It's not as simple as that though, as you would expect. There are large fish swimming about and contact with them will kill you. You do have a spear gun and can kill these fish, but this is not an all-out shooting game.

When a segment of pipe lands in the right place, an item of treasure appears, and this has to be taken back to the ship to earn points and replenish your oxygen. You have a limited amount of this, so keep an eye out when swimming about.

Once all segments of the pipe are in place, a treasure chest will appear at the far left or right of the sea bed. In a position that is really difficult to get to because of your inertia, and the random appearances of fish. Collect this and get back to the ship to complete the level and see the pipe filling with oil.

The graphics are large and move smoothly, but sometime flicker slightly. This is always an issue with early games, but in this case the game makes up for it. There are a variety of fish to be seen and two large anemones on the sea floor, all animated, but with few frames.

As each level is completed, a new set of sea creatures are introduced and these range from small shoals of fish, jellyfish, sea horses sharks, eels and squids..

This is a 16K game, and certainly squeezes a lot into the memory. Control is good and this for me is a hidden treasure. I like this, it's fun to play and you get a great sense of achievement when you complete a level..

Sound is used well with a nice little tune before you jump into the water, and reasonable spot effects throughout..

Overall, a hidden gem worth checking out.

PLAY MANCHESTER 2019

Play Manchester, the large gaming, cosplay and retro event kicked off in Manchester on 1st May 2019. Over the weekend guests had masses of pinball machines to play, loads of arcade machines to try, table top games, cosplay, live events and the market place to view.

This year the event took place at Manchester Central. Previously it was at Event City. This large city centre location made it easy to get to, but I felt the actual hall was too large. I lost the intimacy of other events and it just felt different somehow. It felt like a huge warehouse with loads of people walking about accompanied by a lot of noise.

Saturday was packed. In fact too many people turned up in my opinion, making some arcade cabs either impossible to get to or not worth the effort. Some games had queues of three or four people behind them and getting to the market stalls was like a crowd fight on Black Friday.

There was the usual things I ignored; cosplay, table top games, most of the talks, Nightmare live, modern gaming etc.. but the one talk I wanted to attend, the Mathew Smith one, I couldn't because it was held later in the day and I had to go somewhere.

There was the usual set of arcade games on offer, Tron, Asteroids, Gorf, Donkey Kong, Juno First, Battlezone, Frogger and more. I only managed to play one on Saturday. Imagine that! I was very disappointed, although a few people I bumped into provided me with beer to ease the pain. Thank you.

Sunday was much quieter and I grabbed a lot more game time. There were a lot of retro consoles and computers setup and quite
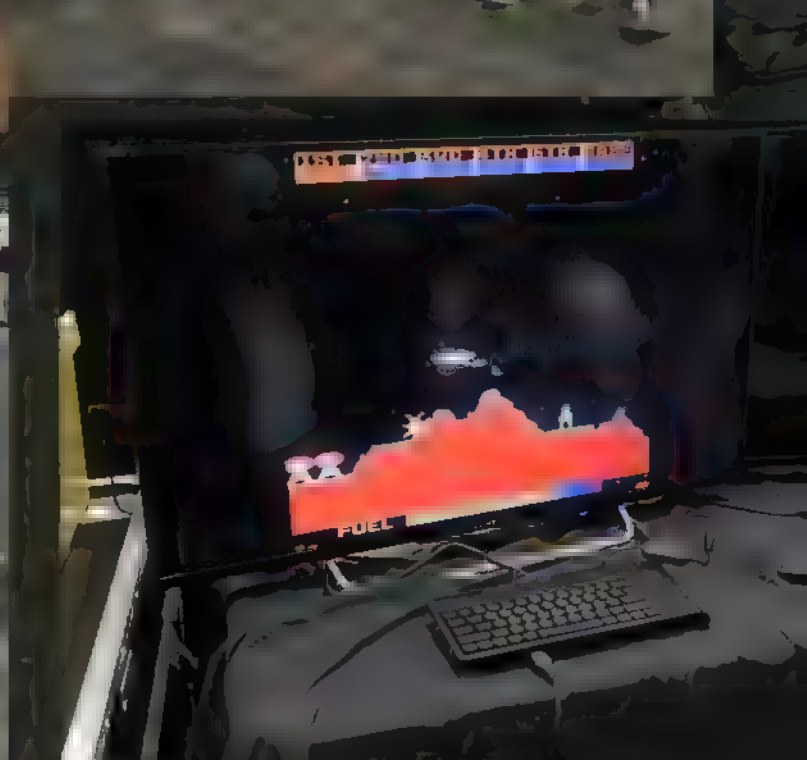
a few PCs running emulators too, which I thought was a bit of cheat.

Geoff completed Atic Atac on a real Spectrum in what seemed like a few minutes to me. I will have to get practicing on this one.

The big thing for me was the Spectrum Next; On show in it's case. Although it was the early version, with a few things now fixed, I have to say it was superb. It was smaller than I thought it would be but the keyboard was fantastic. So nice to use and yet it looked just like the Spectrum Plus one.

Jim Bagley was there, showing off a few games including a version of Scramble that was as close to the arcade version as I'd ever seen for an 8 bit machine. This is one I can't wait to get my hands on. Along side this was a Z-Machine interpreter. So all you adventure fans will be able to play Infocom games on the Next too.

I met up with Geoff and we managed to do a sort of impromptu Let's talk about, although there was a bit of background noise. We had a good look around, drank some beer and chatted to a lot of people.

We also managed to grab Jim Bagley for an interview. The full version will be posted on Patreon soon.

ATIC ATAC

Ultimate Play The Game 1983

never did believe in Ghosts or Monsters.

Atic Atac was one of those game-changers when it was released. Although the story is simple, the game squeezed so much into 48k that everything that had come since, paled into insignificance.

You find yourself trapped in an evil castle, and to escape you have to locate the three parts of the ACG key and then make it back to the main entrance where you started.

You can play as three different characters and each has use of different secret passages. The Serf can go through clocks, the wizard bookcases, the knight barrels.

As you travel around the five floors, you can pick up items to replenish your health and also different coloured keys. These keys are used to open doors of the same colour. You can only carry three items though, so some inventory juggling may be required.

There are white doors, and these open and close randomly and do not require a key.

In some rooms there are trapdoors. Moving over an open trapdoor will take you to the room below. Some rooms have monsters, and these can be fended off by carrying certain items. For example, to get past Frankenstein, you need to have the spanner. If you are quick enough though, you can still get past him without a spanner.

Scroll

TIME
007:24
SCORE
008370

Various enemies materialise in each room as you enter and can be killed by throwing your weapon at them. Weapons are different for each character and bounce off the walls, which is useful. If you collide with an enemy, your health will go down, and this is shown as a roast chicken in the right-hand panel. This slowly gets reduced to bones as you health lowers.
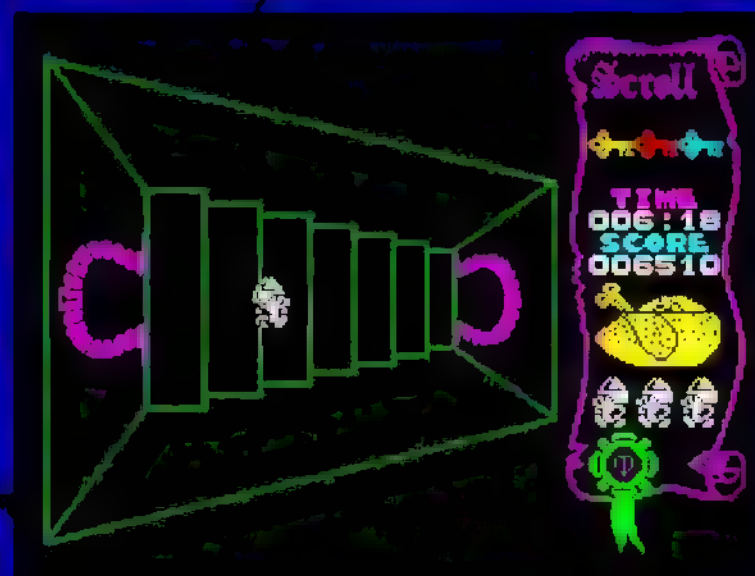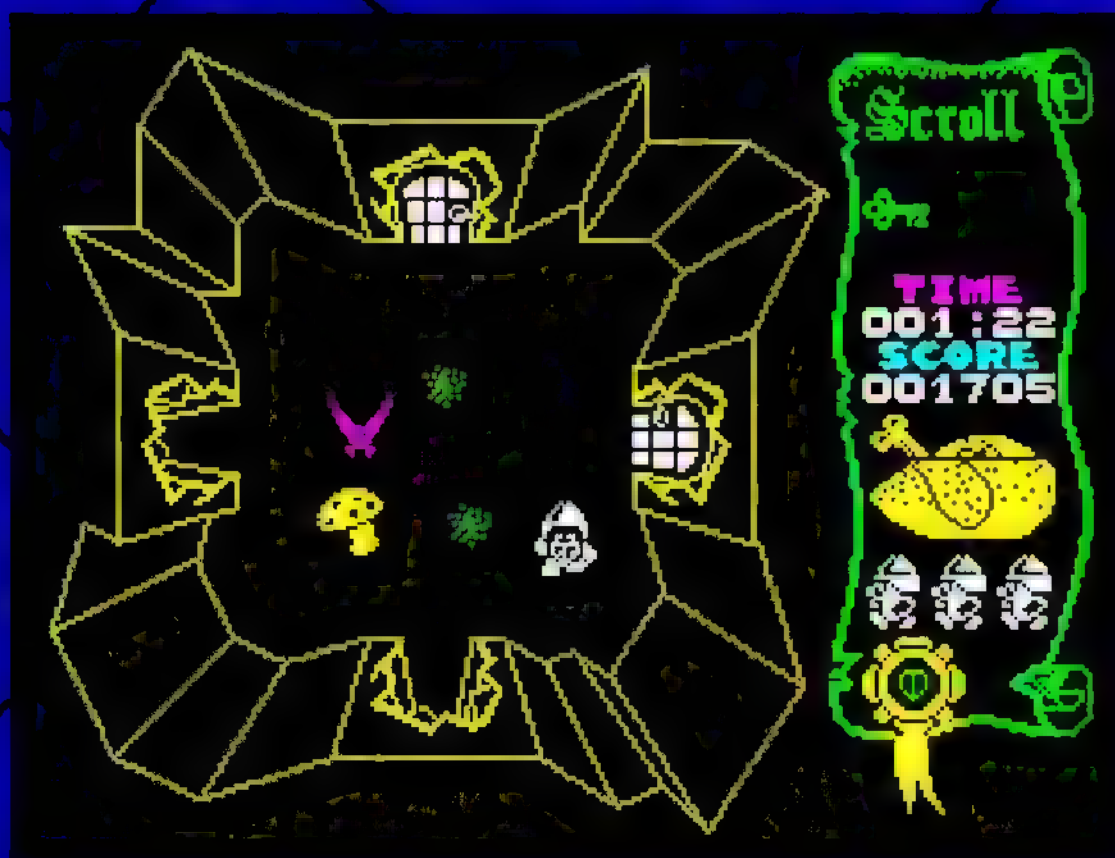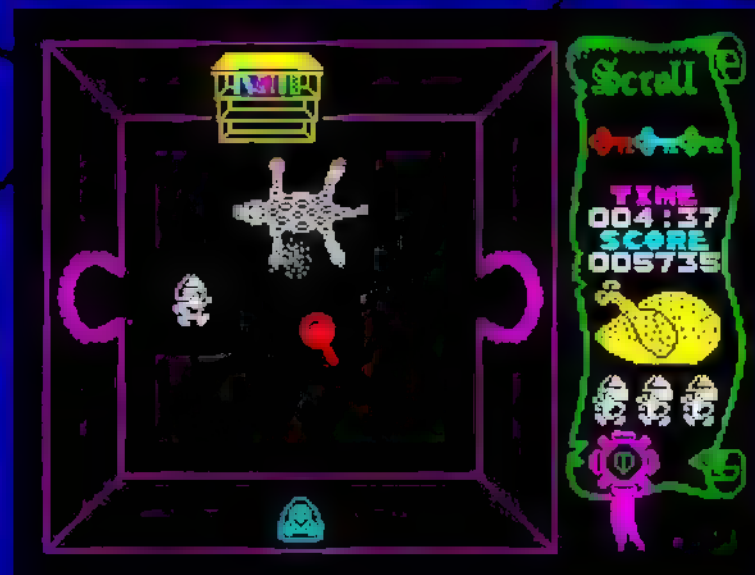
The rooms are line-drawn and are mainly castle based, although you will find yourself in the caverns below. Again these are line drawn but do look really nice. The walls have various things on them like paintings or stuffed animal heads, and it all adds to the atmosphere.

Control is good, making movement easy and the graphics are excellent. Sound is used really well, and the whole game oozes quality.

It is not an easy game, but repeated playing will see you making progress. The three parts of the key are placed randomly, but only in a few locations, so once you know these, the game becomes easier.

Overall, a great iconic game.

F-16
COMBAT PILOT

Digital Integration 1990

F16 Combat Pilot looks very impressive in its large box, and inside there is a whole host of extra bits including a sizable manual. The screen shots on the back are obviously not from the Speccy version, a sneaky trick indeed.

Inside though and the lists of commands on a hint sheet remind me why I dislike this style of game. Huge manuals, pages and pages of data and detailed instructions how to perform various types of barrel role. Not for me.

After loading the game there is a nice mission select screen and I just know this is going to be the best part about the game. Will it prove me wrong?

Let's dive in at the deep end and after selecting the Deep Strike mission, the screen appears corrupted, but in fact it is a map showing various way points and targets.
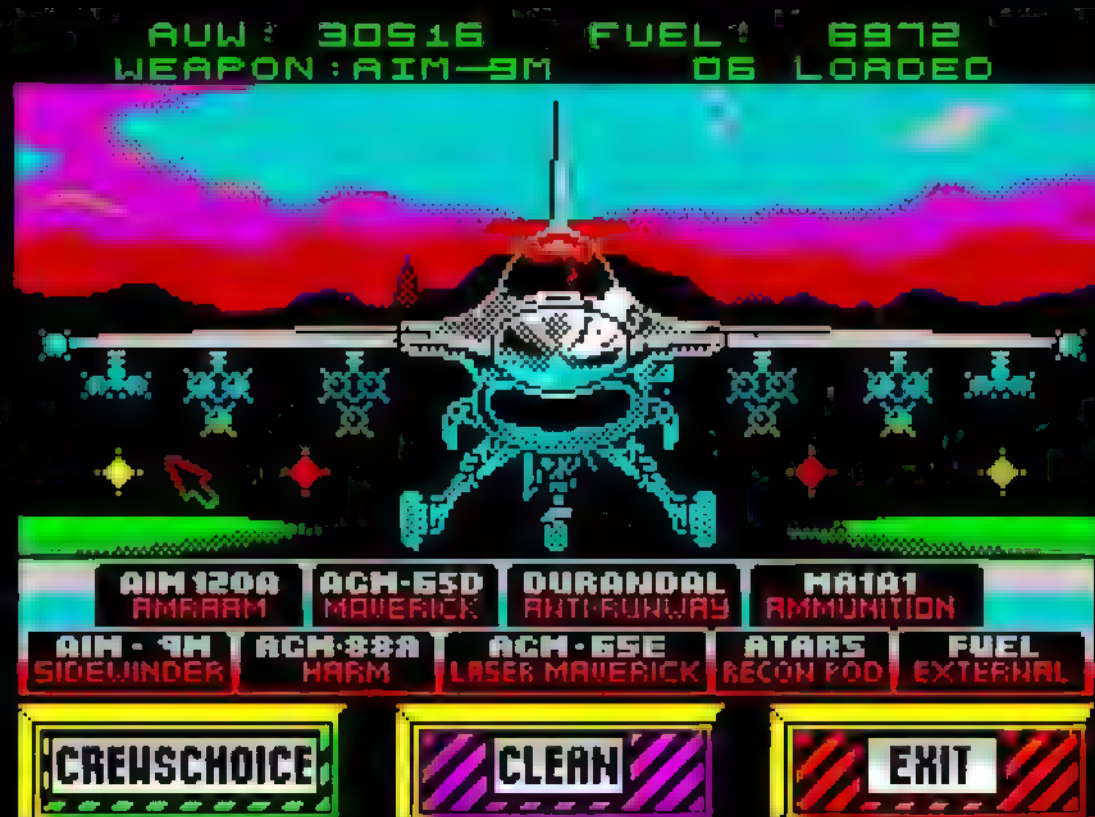
Into the manual to find out more, but that doesn't last long and a few key presses later and we find ourself on a screen that allows you to add various weapons to your plane. Again the graphics are excellent here, but as I never read the manual, I just guessed at what I needed. It's at this point I realise that this sort of game does require a lot of patience and reading to get the best out of it. For fans of this style of game, I would suggest moving on, as I played this by sheer guess work, and probably did not get the best experience.

The control hint sheet is covered with hundreds of keys (OK, I might have exaggerated a little there) but having this many would put me off trying to even load the game.

Eventually I find myself sat in the cockpit and on the runway. Now it's time to blow things up!

A few key presses and I'm in the air, hunting enemy planes. The radar is confusing but eventually a warning signal sounds and I can see a small dot in the distance. The enemy is here!

Nothing happens when I press the fire button, so I skipped through the various weapons available (after consulting the manual again) and got a missile lock. Another press and my missile shot off into the distance. A few seconds later and I was informed I had hit them!

One target down but no time to rest, another one quickly comes into sight and now it's a dog fight. Manoeuvring until I get a lock, and another missile heads off. A small explosion and a second plane explodes.

Now this all sounds exciting, and I suppose in a small way it was. But not that exciting to make me want to play again after this review.

Once both enemies had been dispensed with, I headed off to a flashing blob on the radar in the hope that it was my target.

The graphics are quite good for a flight sim on a Speccy and everything moves smoothly enough. In fact I was quite impressed how the little machine handled everything. The sound is OK but I'm not sure how long I could put up with that constant hissing sound that is supposed to be the engines.

On the way to the flashing blob I shot another plane down and eventually I got there. No weapons lock this time, even after skipping everything I had. Maybe I didn't equip the plane with the right thing. Again, this is where I should have read the manual or at the very least, the mission briefing. I fired off ten seconds of machine gun fire... and nothing happened.

I decided this was boring and headed off for something else to shoot and it wasn't long before the warning sound started. This time though, within a few seconds the screen filled with red. I presume my blood. My plane had been shot down. Just as the game was beginning to grow on me.

Given the time and inclination to read the manual and watch the mission briefings I can see how this game might appeal to players... but for me... it's just not worth investing the effort.

I guess I just don't like flight sims.

ZX·BOX
Sound Amplifier for Spectrum

SPECTRUM GOES
BOOM!

Were you disappointed by the volume of sound that came out of your Spectrum?

Those zaps and swishes just not cutting it?

Well, there were several options available to you. Many of us linked up the ear socket of the Spectrum to the Mic socket of our tape players and by pressing certain buttons you could get the sound out of the speaker, although you did have to keep the tape running.

Another option was to buy an internal modification such as the Telesound, or the better option was to buy an external amplifier.

There were several on the market, and this one, the ZX Box from Interservice Electronics was one such item. Costing just £9.95 too, meant it was within range of many users.

Before I could review it though, I had to fix it.

When I bought it, it was listed as broken, with a rattling sound coming from within. I guessed this was the speaker, so took a chance. Luckily it paid off and I wasn't left with a plastic box full of useless electronics.

When I got it and opened it up, sure enough, the speaker was lose and both wires had snapped. I own a soldering iron and have done a small amount of repair work previously, so I thought I would give it a try.

I removed the remaining wires and put in two new ones obtain from an old PC power supply. Probably not the correct thing to use, but it was near enough.

I soldered them to the speaker and re-mounted the speaker on the circuit board with some double sided tape. That was keeping with the original build, as the old tape was still there, albeit a lot less sticky that when it was first added.

A few screws later and it was back in the housing and ready to test.

Does it work?

The outer plastic box measures 110mm by 60mm by 30mm high and is secured by four screws. Luckily this made it easy to get into.

It has two ports on one side; one for the power and one for the audio in.

It has two leads coming out of the side, one is the power pass through and I have no idea what the other one is! On one side there is a large volume wheel that worked but it certainly benefited from a little WD40.

To connect it up to the Spectrum you unplug the power from the Spectrum, and plug it into the ZX Box. Plug the pass through power lead from the ZX Box into the Spectrum. Plug a mono audio cable into the ear socket, and into the output of the ZX Box. That's it, I was now ready to see if my handywork had paid off.

Because the holes for the speaker are on the bottom, it is best to try and stand the unit up to get clearer sound. With the volume set to half, I turned everything on and loaded a game.

It worked!

It made a real difference in the sound too. The tiny speaker of the Spectrum, made small and poor quality to keep costs down, was totally outclassed by this larger one. The BEEP sound of the Sinclair machine was never going to rock the world, and the bass was none existent, but even so, using a sound amplifier definitely made a big difference.

Music and sound effects are much louder and clearer through this unit and I was pleased the only thing wrong with it was those two speaker wires that were easily fixed.

In our modern world, you can connect the Spectrum to the audio in of your television, but back then, this was probably the best and easiest way to get better sound.
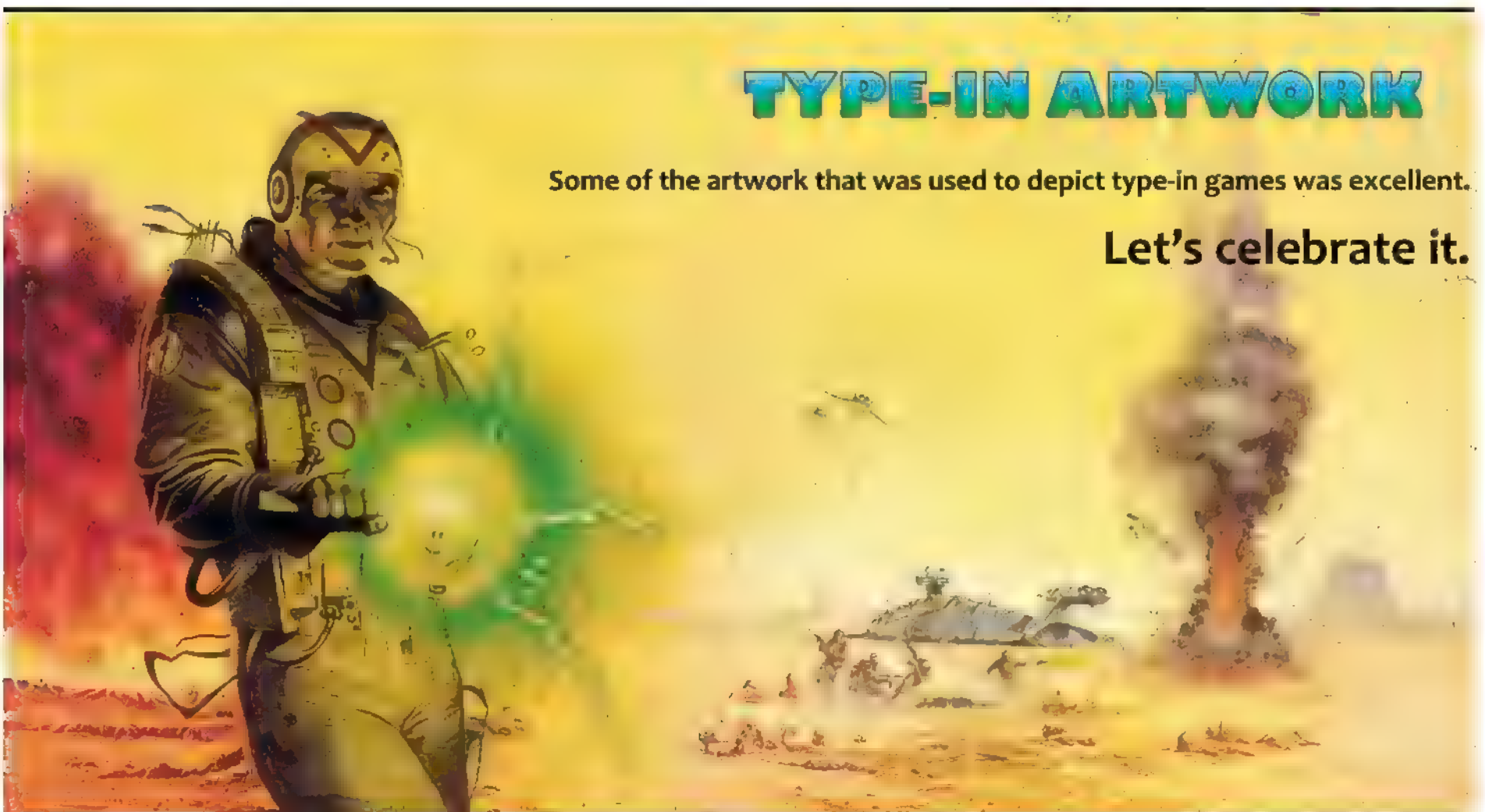
This is a nice unit that delivers decent sound, at least from the Spectrum, and I am sure anyone who bought one would have been very pleased.

TYPE-IN ARTWORK

Some of the artwork that was used to depict type-in games was excellent.

Let's celebrate it.

BLUE MAX

US Gold 1984

Before we get into the game, I noticed a US Gold club card inside the box. Joining the US Gold club, apparently, will get you information on programmers, and companies, as well as a newsletter, and all for just £9.99. Digging into the archives there are a few news letters to read, but they seem to just promote new games from US Gold, but then again, as an adult I would expect this kind of behaviour.

Onto the game then and you play Max Chatsworth, known as the Blue Max. You are on three missions to destroy targets within the enemy cities, but of course you have to get there first.

This game obviously takes inspiration from Zaxxon, the classic isometric shooter released into the arcade in 1982.

Your plane flies diagonally as the landscape scrolls, although not smoothly, and enemy targets appear in the form of bridges, planes and tanks. To destroy them you can shoot them or bomb them.

To drop bombs, you have to press and hold the fire key and the down key at the same time, which is an odd combination, but does mean that the game can be played with a joystick. Getting bombs on target means you will have to be careful as this involves flying at low altitude for better accuracy.

The scroll is jerky, moving down and left one character square each jump, getting round the problem of the Spectrums lack of hardware scrolling. It doesn't actually get round it, it just makes the game look a bit bad.

Most of the graphics are monochrome, probably to avoid colour clash or to keep the game speed up. The sound is a bit dull sadly, just a few blips here and there.

Gameplay is challenging, mainly because of the colours used which sometimes makes it tricky to work out where your plane is on a landscape

ALT 34   FUEL 185
SPEED 200   BOMBS 29 SCORE 0010

full of things drawn in the same colour. This usually ends with you crashing or being shot down.

At the end of the level, you land back on the air strip and get fuel and repairs. However, you are vulnerable here and can get killed by enemy planes flying over as you wait to refuel. This is a bit unfair really as the player has no control over this. You have to make sure you get enough fuel for the next flight, or you can end up crashing again.

The control panel changes colour to reflect different hazards, for example it turns magenta if you are getting too low. This can distract a bit, but I suppose it gives feedback that is easy to spot rather than having to check for a small dial somewhere.

Once you get used the placements and the

ALT 20   FUEL 168
SPEED 200   BOMBS 26 SCORE 1430

bomb speed, you can take out a few targets easily and just when are you enjoying it, a plane crashes into you giving you no chance to move out of the way.

Overall this isn't a bad game and certainly worth a quick blast, but not one I would play for a long time.

THREE OCTOPUSS

KAS29 2017

Here we have a very different game, that reminds me a little bit of Bubble Ghost on the Amiga. You have to guide the three octopuses to safety one at a time and the full story is told via a rather nice introduction sequence.

To get your octopuses to safety you have to bounce them through various screens because you don't control them directly. This may sound easy, but it isn't.. and sometimes this can be a bit frustrating. Not controlling the main character, and controlling something else that has an affect on the main character can be very tricky to pull off.

The idea is great though, and a nice change from the usual shooters or platform games released, and the game mechanics certainly challenge your brain. You have to think differently to get anywhere.

As you can tell, you do not directly control the baby octopuses, instead you control a jelly fish. Positioning the jellyfish underneath the octopus will bounce them upwards, and using this technique, you have to get them to safety.

The danger area is the bottom of the screen, if they reach the bottom, they will die so you are always stabbing keys to try to keep them bouncing upwards - it's a kind of juggling act.

The game proved tricky for me, even after a few plays, as the jellyfish sometimes got stuck on the scenery, but overall, this is an interesting and clever game. I enjoyed trying to get the bounces right and it was a relief when I managed to get them to a new screen and a new challenge.

There is a great tune playing throughout which really helps with the enjoyment, and calms the nerves if things don't go to plan.

There are bonus items to collect along the way, and bubbles that take the octopuses upward away from your carefully planned trajectory. Another clever mechanic.

If you enjoyed Bubble Ghost then you'll love this game. Give it a try.

RETRO ON RETRO

TRIALS AND TRIBULATIONS OF RUNNING EMULATORS ON OLD HARDWARE

The original idea for this feature and the subsequent segment of the show was going to be about using old DOS-based emulators on real retro hardware. When I say real retro hardware, I mean the computers of yesteryear, the 386, 486 and early Pentium PCs. However, things didn't go as planned, as we shall see.

THE HARDWARE

First I needed some real hardware. The old laptop from episode 52 was useless because the floppy drive was broken, so transferring files to it was just too slow. I therefore attacked this problem from two angles thinking that at least one of them would work.

First I scouted the old IT storage rooms at work and found a Pentium laptop. This was a Dell Latitude C840 in fully working order and in decent condition. This staple of the business man back in the day is a Pentium 4 machine with a 2Ghz CPU, 512mb of RAM and a 40Gb hard drive.

At the same time I purchased a Compaq Evo 510 desktop PC from eBay with nearly the same specification, but with the added advantage of having PCI slots should I need them.

THE SOFTWARE

Once the laptop fired up, this ten year old machine booted into Windows XP. No good for my needs, so I quickly reformatted it and installed DOS 6.22 from floppy. This went well and it was good to see the C:\ install screens again. How simple things were back then.

Once installed, I had to install the CD drivers in readiness for the CD image prepared containing all the emulators I wanted to try. Config.sys and autoexec.bat files were suitably changed and the machine was ready for its trial run.

I swapped out the floppy drive, inserted the CD drive and rebooted. Things went well and it wasn't long before the first emulator, Gerton Lunter's excellent Z80 was up and running. Jetpac, The Hobbit, Manic Miner all ran fine and it was great to see these old emulators running perfectly on the hardware they were designed to work with.

Next X128, my favourite emulator back in the day, it had so many unique and exciting functions. This failed to load however, complaining it could not locate the Sound Blaster card. This was a huge disappointment but all was not lost; I knew things could be changed in the .INI file to disable Sound Blaster support. The laptop did not have a fully compatible Sound Blaster card anyway and so I was half expecting something like this.

I duly started to edit the config file, but despite my best efforts, X128 still wanted to see a Sound Blaster. I struggled on and as I was trying to get the DOS Sound Blaster drivers loaded, the Compaq arrived. Thinking this would be easier to set up I decided to stop work on the laptop.

I plugged it all in, removed Windows XP and installed DOS – or at least tried to.

Plan B

The floppy drive was dead. No power, no click on boot up, nothing. A quick look inside found the data cable not connected, but even with it plugged back in, the drive just did not work.

Luckily the machine had USB ports and I had a USB floppy drive and the BIOS let me select the USB device to boot from. Eventually DOS was loaded along with the CD drivers, and the CD worked which was a bonus at this stage.

Running X128, I held my breath and... no, again it complained about the Sound Blaster. On top of that Z80 complained about lack of memory.

The Compaq came with 256mb, so quickly upgraded it to 512mb which sorted out Z80, but X128 was still not working.

I checked the BIOS and there were no real settings other than to disable the on board sound. I did this, found a real Sound Blaster card and plugged it into the PCI slot.

Booting up and the DOS drivers would still not pick it up!

Plan C

I didn't want to go down this route but I had put so much time in so far so it was Windows 98 time on the Compaq. Once installed I then had to find the correct drivers for the video card and chipset etc. At least the Internet is about, unlike back in the day!

Windows 98 did not pick up the Sound Blaster.

It found an unknown multimedia device. What the hell does that mean? Loading the drivers failed as the card could just not be found. I know the card was working so there must be something else.

I swapped out the card for a different brand, a Hercules Muse XL. This again would not install. All this was starting to point to the machine.

Plan D

I flattened the Compaq and installed windows 2000 - yes, remember that? Still the same problems though.

Removing the sound card and disabling the on board sound still caused the multimedia device to show up so no way to disable the onboard sound then! At this point I packed it in for the day.

Plan E

Windows 98 on the laptop. Installation went OK, but I could not get video drivers for that version of windows. I installed Windows 98 2nd edition, and the video drivers now worked. Progress at last!

I installed the sound drivers and at last I had sound, but only in windows. Running X128 still caused the error, no Sound Blaster found.

Back into the BIOS, nothing to change.

Reading X128 documents it notes it can only pick up IRQ 1 to 7 for sound cards. The setting on the laptop was IRQ 11, with no way to change it. X128 was not happy, just like me!

I tested some of the other emulators though, I had to get something out of this mammoth four-day session. Sadly it was a pretty mixed bag.

JPP loaded but was far too fast to be of any use. Manic Miner was going at least 50-times faster than normal! I suspect the emulator ran at the fastest the CPU could manage.

The speed limited version, PJPP loaded, but when pressing F3 to load a game, it crashed out.

Z80 was fine and it was good to use this again eventually. I did grab a few games of Jetpac but when trying a multi-colour game it did not like it.

R80 loaded but the sound was way off. Maybe because it could not detect the sound card, but whatever reason Manic Miner sounded the worst I had ever heard it.

It handled multi-coloured games fine, but the laptop fan was going into overdrive!

Warajevo is a good DOS emulator, but it did not like running under Windows. Sometimes it just crashed windows altogether, on the odd occasion it worked but the game detected phantom keypresses.

It was getting to the end of the fourth day now and I had a room full of spare computer parts and various screwdrivers and loose screws. My enthusiasm was being tested, and it was time to pack it all away.

My time spent messing about with this old hardware was a mix of nostalgia and frustration. I don't remember things being this annoying back in the day. Maybe we are spoiled by modern operating systems and new emulators.

Back in the box with the Compaq and off to the tip. The laptop goes back to work for crushing.

PLAYING GUIDE

As there aren't any play guides on the internet for Quicksilva's great early game, and one of my favourites, here are top tips to get you through it and defeat the evil aliens.

TIME-GATE

GAME OVERVIEW

The idea is to locate the Timegate in each sector and jump back in time. Eventually you reach the year Zero and can then locate the alien planet and destroy it, thereby removing them from the future.

The game difficulty is based on the number of Timegates required to get to the year zero.

Control Panel: Left

This is very important, and is the key to playing the game. The left hand third shows long range scanners with 18 sectors. Sectors that are empty have no aliens or planets in them. Dashes are aliens and crosses are planets. Planets are used to replenish your ship and repair damage taken during the space fights.

Empty sector

Alien

Planet

Control Panel: Middle

The middle third will show you text information such as damage reports and the date after any jumps. Keep an eye on this.

Control Panel: Right

The righthand third will show you several things. Each of the squares down the left and right represent a part of your ship. These change colour if the related part is hit by alien fire. If they get to red, the part could fail or break forever. These include engines, shields and weapons. Never let these get to red!

The four vertical lines show, from left to right, position of alien (left/right); position of alien (up/down); your speed and proximity to the alien. To locate an alien, use up/down/left/right until the two lines on the left line up in the middle. Adjust your speed using 1-5 until the right most line nears the bottom. The alien will appear shorty!
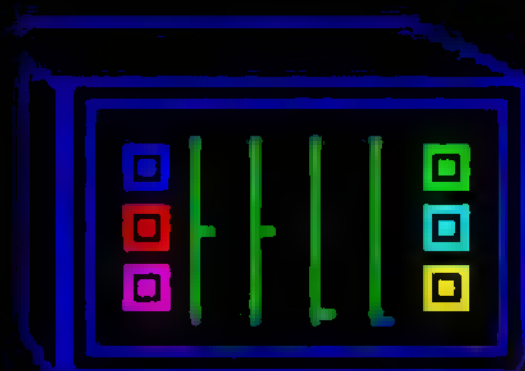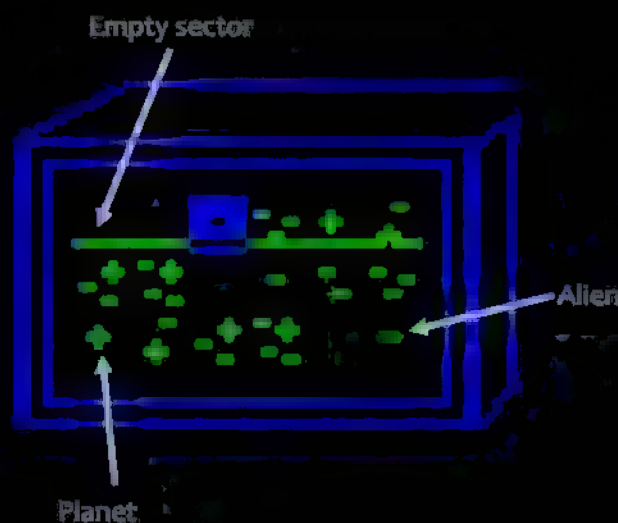
The Star Wars like jump sequence was amazing at the time

4D ARCADE ADVENTURE QUICKSILVA
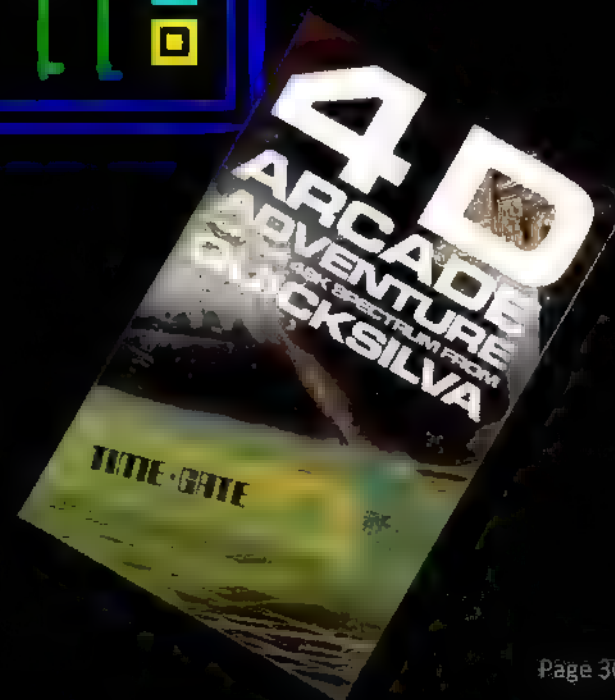
TIME-GATE

Tactics

Avoid aliens where possible. Jump to each empty sector first. Sometimes you can locate a Timegate in an empty sector. You can't use a Timegate if there are aliens in the sector. If you locate a Timegate, you will automatically pass through it.

Jump to sectors with planets and no aliens next. The same rule applies as above.

If you still haven't found the Timegate choose sectors with low numbers of aliens. Work your way through these then move onto the more populated sectors.

Use planets sparingly. Clear sectors of aliens, leaving the planets until you need them if possible. Once used, they explode!

Shooting

A good tactic for shooting aliens is to manoeuvre them into your sight at the bottom of the screen, shoot and then move away until they are out of view. Repeat this until they are destroyed. Usually about 4 hits. Each hit changes their colour, the last one being magenta.

Speed

There are five speeds and you can play the entire game on any one of them if you like, although the fights are harder at high speed. Choose a speed you are comfortable with, or use faster speed to get to the alien, and then drop down to a slow speed to fight them. Which method you use will depend on how you like to play.

Use planets sparingly
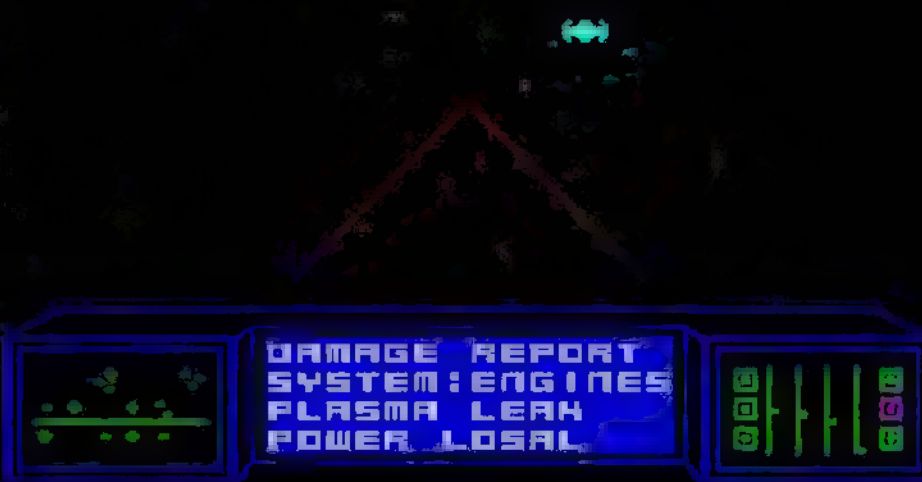
NAVCOMP REPORT
PLANET LOCATED
LAND SEQUENCE
ACTIVATED

DAMAGE REPORT
SYSTEM:ENGINES
PLASMA LEAK
POWER LOSAL

MIND YOUR LANGAUGE

GEORGE BECKETT DELVES INTO LOGO

The final language we shall look at in this series takes us back to where we began, in that it is a language designed to help people learn to program - a bit like BASIC. The language has some advantages over BASIC though also some quirks.

The language I am talking about is Logo, which has its origins in the late 1960s, when it was developed to try to simplify the process of teaching people about computers. Logo is intended to be accessible to all, particularly children. It is an interpreted language, like BASIC, and has a simple (if, by today's conventions, unusual) syntax, with English-like command forms and a wide range of uses.

If you have heard of Logo before, it is probably in connection with turtle graphics, which is a functionality that allows the programmer to easily create complex and beautiful drawings and patterns, either on the screen or possibly using a small hemispherical robot fitted with a pen called a floor turtle. However, the Logo language was originally focused on list processing, which - you may recall from our look at Prolog - was a popular topic in artificial-intelligence research, at the time.

Turtle graphics was added to the language in the 1970s, to inspire children's creativity - though the addition is potentially both a blessing and a curse. Turtle graphics certainly boost-ed the popularity of the language, but also became the focus of the language for many, downplaying its AI origins and potentially reducing the amount people learn from using it. Some versions of Logo, from the 1970s, actually only supported turtle graphics, with the list-handling capabilities dropped completely.

The most common version of Logo on the ZX Spectrum was ported, in 1984, by a Canadian company called SOLI, and published by Sinclair Research as part of the Language and Utilities range (catalogue code L6/S). It is based on a version of Logo originally written for the Atari 8-bit computer range, and provides a full implementation of the language, including both turtle graphics and list manipulation: able to draw people in with its drawing capabilities, but also to teach them concepts such as modular programming, recursion, and (as well as any 8-bit version can) artificial intelligence.

Obtaining a physical copy of Sinclair Logo is a bit trickier than for the other languages we have looked at. However, you can download a digital copy of both the software and docu-

At £39.99, Sinclair Logo was one of the most expensive software packages for the ZX Spectrum, though you did get a lot for your money.

mentation from the World of Spectrum website.

Logo was published in Sinclair's big-box format for the hefty price of £39.99. However, you did get quite a lot for your money, including two manuals: an introductory guide, which focused on the language's capabilities to create turtle graphics; a reference manual, which documented the full language in more detail, plus a handy quick-reference card and most importantly a powerful implementation of Logo.

To use turtle graphics in Logo involves manipulating an on-screen (turtle) icon with commands to move forwards or backwards, and to turn left or right, tracing a path on the screen. Logo is an interpreted language, so you can enter commands for immediate use. For example, to draw a square, you could enter:

```
FD 50 RT 90 FD 50 RT 90 FD 50 RT 90
FD 50 RT 90
```

- where FD (or, in long form, FORWARD) is the command to move the turtle forward a specified number of pixels and RT (or RIGHT) turns the turtle to the right through a specified number of degrees. It is a little like programming a Bigtrak toy (for those of you who were children in the late 1970s). There are corresponding commands to move the turtle backwards (BACK or BK) and to turn the turtle (LEFT or LT). By default, the turtle leaves a trace of its path. However, you can control this with the commands PENUP (or PU), to stop tracing, and PENDOWN (or PD), to resume tracing.

Armed with these simple commands (and CLEARSCREEN, to reset everything), it is possible to create simple shapes or—if you have the patience—complex pictures. However, the process is likely to become tiresome quite quickly, motivating you to move onto some more advanced techniques.

At this point, we have only entered direct commands into Logo, which are executed immediately. However, it is more usual to type a program into an editor and then run the whole thing once it is ready.

Logo, unlike BASIC, does not have a concept of a top-level program that you can "run". Instead, a program is represented by a user-defined procedure that, in turn, can be made up of other user-defined and built-in procedures, assembled in a bottom-up way similar to FORTH.

Sinclair Logo has a built-in editor, using which you can create new procedures. To start the editor, you would typically enter the command EDIT followed by a procedure name—for example 'EDIT DRAWSQUARE', which would start an editing session with either a new or existing procedure definition for DRAWSQUARE. Most editor commands are fairly obvious (the introductory manual contains the details). One thing

that is unusual is exiting the editor: to save changes and exit the session, you need to switch to Extended Mode and type C; or, to abandon the editing session, you need to type Break.

In Logo, to define a procedure, you use the TO command, followed by the name of the procedure and optionally its input arguments. Subsequent lines make up the body of the procedure, until the definition is terminated with the command END on its own line. To illustrate this, consider the following procedure, which draws a square of specified size.

```
TO DRAWSQUARE :SIZE
    REPEAT 4 [FD :SIZE RT 90]
END
```

Here you see the first quirk of the Logo syntax. In Logo, variable names must be preceded by a ':'. This is to help Logo identify references to variables (it is actually shorthand for a procedure called THING, which returns the value of the named variable, though we will not worry about that for now). Without the colon, Logo would assume SIZE was a procedure, which it would try to execute.

The main body of the procedure has just one line, starting with the REPEAT command, which instructs Logo to repeat a group of instructions a set number of times. The first argument to REPEAT is an integer denoting the number of times to run the command sequence, which is the second argument. In Logo, square brackets denote a list - in this case, a list of commands/procedures and associated arguments.

A little like in FORTH, Logo programs consist of multiple layers of procedures, promoting a bottom-up design process. DRAWSQUARE, above, is a user-defined procedure that relies on three built-in (primitive) procedures - FD, RT, and REPEAT. Having defined it, the program could continue to be built up by including DRAWSQUARE in another procedure. For example:

```
TO DRAWFLOWER :PETALS :SIZE
  REPEAT :PETALS [ DRAWSQUARE :SIZE RT
(360 / :PETALS) ]
END
```

As you can see, with just a few lines of code, you can make an attractive flower-like pattern.

In Logo, there are two devices to control the

flow of a program. In addition to the REPEAT loop seen earlier, the other devices is recursion - the ability for a procedure to reference itself (which you may remember from our look at Prolog).

For turtle graphics, recursion opens up the possibility of making some complex and beautiful (fractal-like) patterns. One of the simplest examples is the Koch snowflake.

```
TO SNOWFLAKE.GEN :LENGTH :DEPTH
  IF :DEPTH = 0 [FD :LENGTH STOP]
  SNOWFLAKE.GEN (:LENGTH / 3) (:DEPTH
- 1)
  LEFT 60
  SNOWFLAKE.GEN (:LENGTH / 3) (:DEPTH
- 1)
  RIGHT 120
  SNOWFLAKE.GEN (:LENGTH / 3) (:DEPTH
- 1)
  LEFT 60
  SNOWFLAKE.GEN (:LENGTH / 3) (:DEPTH
- 1)
END

TO SNOWFLAKE :LENGTH :DEPTH
  REPEAT 3 [ SNOW-
FLAKE.GEN :LENGTH :DEPTH RIGHT 120 ]
END
```

An impressive snowflake can be drawn with the following commands:

```
CLEARSCREEN
PENUP
SETPOS [ -40 -80]
PENDOWN
SNOWFLAKE 150 4
```

MIND YOUR LANGUAGE


```
?DRAWFLOWER 36 40
?
                              C
```
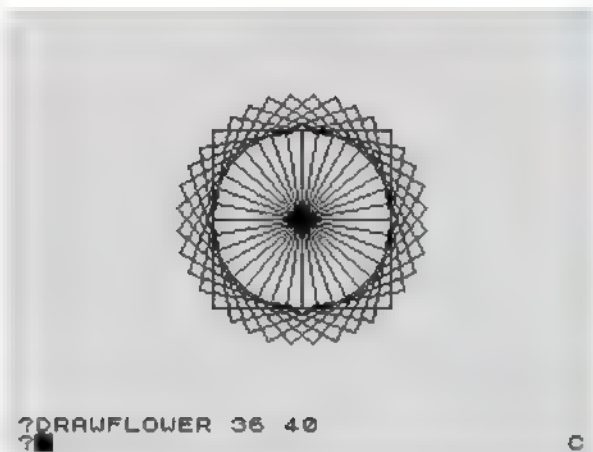
- where the first four commands are simply to clear the screen and to position the turtle near the bottom of the screen without leaving a trace. The process of drawing the snowflake is quite slow, taking a couple of minutes, at least. Things can be speeded up by first issuing the command 'HIDETURTLE' to avoid the Spectrum needing to re-draw the turtle after every command. Further, if you are using an emulator, you can probably set the emulator to run at a faster speed.

If you have a mathematical background, you might want to take a look at a book called "The Algorithmic Beauty of Plants" by P. Prusinkiewicz and A. Lindenmayer, which explains how the Koch snowflake is constructed, and goes on to defines mathematical patterns that model how plants and trees grow and then, using Logo, brings those models to life in a computer.


```
?SNOWFLAKE 150 4
?
                              C
```
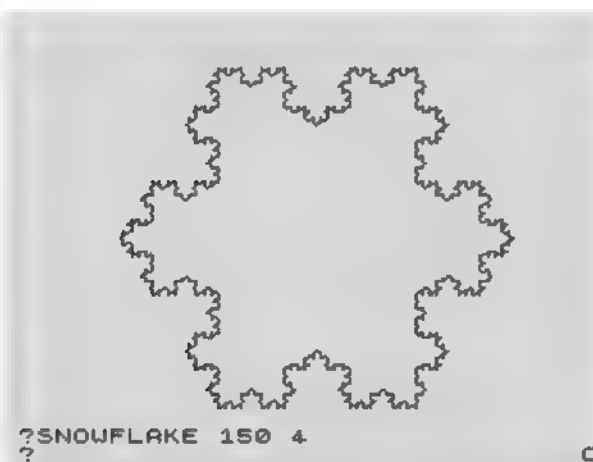
Sadly, the Spectrum's screen resolution reduces the capacity for creating finer-detail patterns. However-

er, this limitation could be overcome by moving from the screen to using a real (floor) turtle.

A floor turtle is a simple robot, which provides a physical manifestation of the on-screen turtle icon. Typically a floor turtle can perform basic forward and backward movements, plus turn left and right. However, crucially a floor turtle is fitted with a pen that can be either deployed or retracted. When placed on a large sheet of paper, with the pen deployed, the turtle will trace its pre-programmed path across the paper and, subject to the precision of its mechanics, can create much finer-detail designs than is possible on the ZX Spectrum screen.

The reference manual for Sinclair Logo describes a set of commands to interface to a floor turtle, connected to the Spectrum, though it is not clear to me if a floor turtle compatible with Sinclair Logo was ever produced. I have not been able to find any details of how the interface might work, though it should be possible to work this out by disassembling the turtle driver code, to work out how it communicates with a floor turtle, and then using a simple I/O board and some electronics skills to connect a modern turtle to the Spectrum.

In fact, connectivity seems to be a strong point of Sinclair Logo when compared to other software in the Language and Utilities range. In particular, Logo has good support for the ZX Interface 1: you can use Microdrives to hold programs and data, and the RS232 port to communicate with more sophisticated real-world devices. Logo also supports the ZX Printer on 48k models and the printer port on 128k models.

Not The Only Version

Sinclair Logo is not the only version of Logo available on the Spectrum, nor was it the first. Early on in the life of the computer, CP Systems released a product called **Snail Logo**, which was billed as providing an advanced version of Turtle Graphics ideal for novice programmers.

Snail Logo introduces concepts such as modular design, procedures, parameters, and variables, as well as recursion. It has a Logo-like language, though some of the built-in procedures are different to the convention adopted by most other implementations. Further, Snail Logo provides what the author calls an operating system, to clearly distinguish between different steps in the development of a program: for example, writing procedures, running tests, and assembling a program. Finally, Snail Logo includes support for a floor turtle, called the Zeeker micro-turtle, which was popular at the time.

The Snail Logo interface is much more restrictive than in Sinclair Logo, and is clearly designed to teach programming rather than to be used to develop significant projects. Snail Logo has some analogues to Sinclair's "Beyond Basic" software, which teaches Z80 machine code and provides limited capabilities for experimenting with such code. Snail Logo can only handle a limited number of (that is, nine) procedures at one time and has a fixed set of six variables, labelled A, ..., H, some of which have specific purposes. On a more positive note, Snail Logo has careful syntax checking and includes a set of example procedures to get you started.

My original intention was to re-implement the Koch snowflake using Snail Logo. However, the limitations of the language made this very challenging, to the point where I was hacking rather than programming. Instead, I wrote a version of the DRAWFLOWER procedure from the start of this article.

First we need a procedure to draw a square, which is straightforward:

```
PROCEDURE SQUARE
  REPEAT 4
    FORWARD A
    RIGHT 90
    RFINISH
END
```

Hopefully the above is reasonably compre-hensible, though a couple of things are of note. First, the procedure names can only have up to eight characters, so I have abbreviated DRAWSQUARE to just SQAURE (worse still, Snail Logo distinguishes procedures based on the first two letters, so having procedures called SQUARE and SQUASH would probably lead to unexpected results). Second, inputs to a procedure are defined implicitly, so do not need to be specified in the definition. Up to three input arguments can be passed to a procedure, which are assigned to variables A, B and C, respectively. Here we use one input argument, assigned to A, which will be the size of the square to be drawn.

The SQUARE procedure is then used in the FLOWER procedure (again, DRAWFLOWER has too many characters):

```
PROCEDURE FLOWER
  SET E,360
  MAKE B=E/A
  REPEAT A
    PROCEDURE SQUARE,8
    RIGHT ▮
    RFINISH
END
```

Here the constraints of Snail Logo really began to challenge me. First, basic arithmetic has to be done with the command MAKE, which can only take variables as part of the expression (not literal numbers), so I needed to assign a variable (E) to have the value 360, before working out the angle ▮ through which to rotate the snail between drawing each square. Second, user-defined procedures can only take literal values as input arguments (not variables) so I have hard-wired the size of the petals to be '8', instead of passing this in as an input to 'FLOWER'. Having done all of this, one can draw a flower using the program:

```
PROCEDURE FLOWER,36
END
```

While Snail Logo has some interesting ideas, the limitations are such that a novice programmer would probably learn some bad habits and/ or not be able to implement some of their ideas. For this reason, I recommend that you use Sinclair Logo as a far better way to learn and experiment with Logo, and think of Snail Logo only as a curiosity.

In the next article, we will look at what else Logo can do, beyond turtle graphics, and try a little natural language processing.
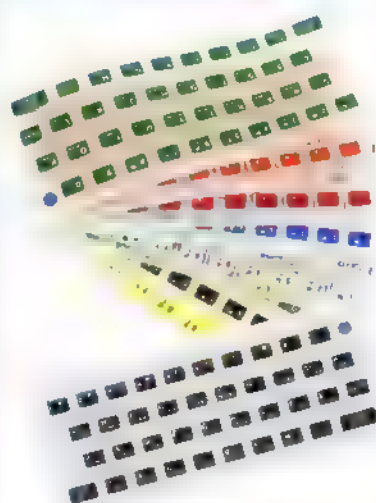
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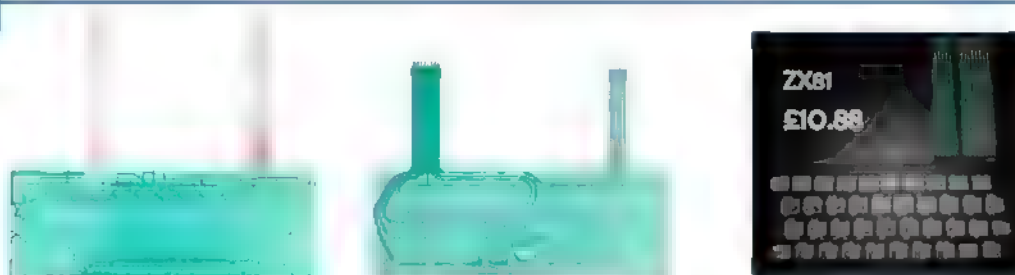£24.88

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ODDWARE

I see everything and nothing. I offer random inspiration along with meaningless gibberish. I do not think, therefore I am always right...

Every system has them.

Those wonderful, sometimes meaningless things that someone once, somewhere, thought might be a good idea.

"I see everything and nothing. I offer random inspiration along with meaningless gibberish. I do not think, therefore I am always right..."

The words that greet you when you run AutoMuse.

From this point on, after pressing the key, you get randomly generated messages from a fixed set of words. The program uses several different fonts to show the messages, and they just keep on being generated.

Some are bizarre..

"I see progressive instinct it combines ignorance"

Some strangely familiar...

"I see frightened exploration"

And some just odd...

"Combine hero on bay that strengthens a black sanctuary it beyond plunges the dark precept adapting"

With a glass of wine this little piece of Oddware is welcomingly engrossing. What will it come up with next? It is random each time, so you just never know what is going to appear on screen!

Each phrase takes time to generate, so when you get a long pause, you just know you are going to get a long rambling message that may or may not mean anything.

I see a spacious sea in some a successful prattle.

Confidence at amorphous prosperity that lubricates territory it strengthens the curious cognition sprinkles.

Go short lake where wasted a habit in evolution inside cry from plenteous mind.

Combine the dynamic elegance

A gullible idea.

Position crowd with a distinctive collision outside some wasteful past.

I see the excellent love over an open morning by guilty emptiness.

Laugh sanctuary.

PICTURES FROM REVIVAL 2019
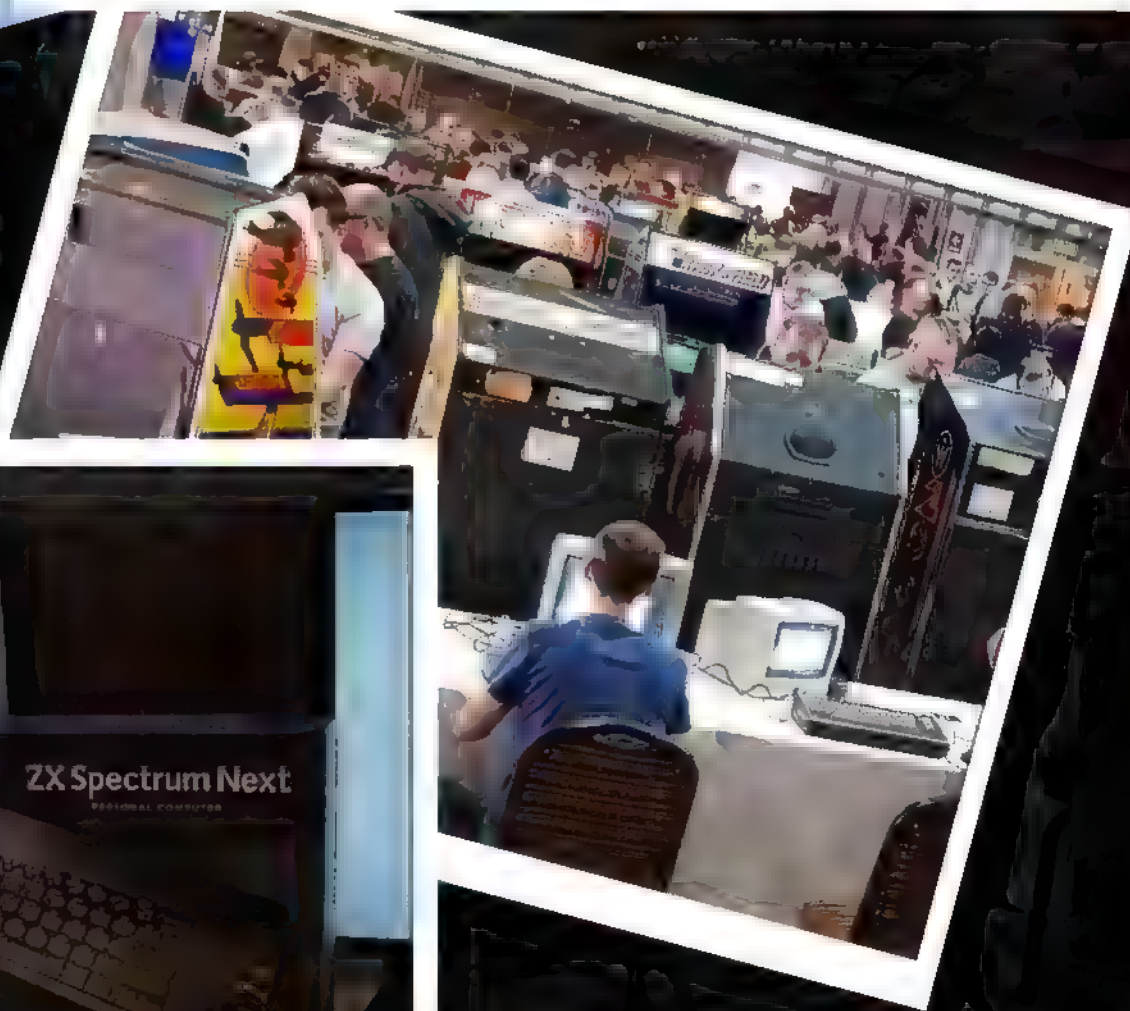

Plenty of stalls to spend your cash

Classic micros and arcade cabs

Great atmosphere

ZX Spectrum Next
PERSONAL COMPUTER
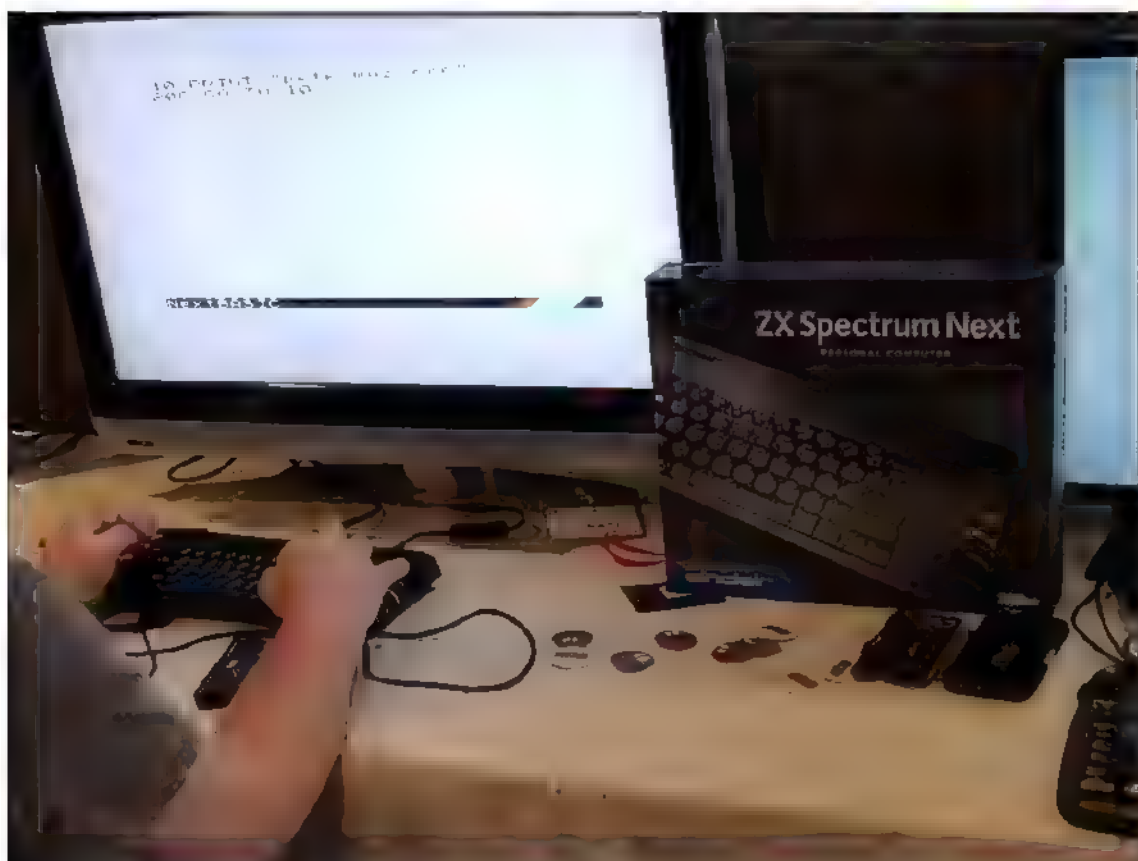
Jim Bagley and the Spectrum Next

GRUMPY OGRE'S

Adventure Page

Welcome back to strange places where your mind wanders freely and your brain shifts into a higher gear.

Many issues ago I said I would look at a favourite game of mine from back when I was young, carefree and filled with grog, should I remember to do so. Well I forgot. I suppose it comes to us all!

The game in question is Inferno from Richard Shepherd Software, and to my old mind, one of his better attempts. I remember it fondly for many reasons, so when I came to load it up, I was interested to see how it had aged. If it was anything like myself, then I suspected, badly.

I also said, again in a previous rambling, that I would look at Adventure 1, the Absersoft game later picked up by Melbourne House.

I guess then, it's time to keep my word and dig out these games for a quick adventuring session.

The Inferno

```
Exits lead : north , west
You see : a bottle

> e
> get bottle
> I DON'T UNDERSTAND GET
```

The game begins as I remember, in front of a portal. There are several locations you can get to from here, but soon hit a brick wall — literally. After you have collected a few things using TAKE instead of GET (which is annoying), all progress is halted and I spent ten minutes or so trying to JUMP WALL, CLIMB WALL, DIG WALL and more.. and I was getting nowhere. It's at this point that you start to try stupid things.

```
You look around :
You are at the foot of the brick wall
```


A graphic adventure into the underworld for the 48K spectrum

RICHARD SHEPHERD SOFTWARE
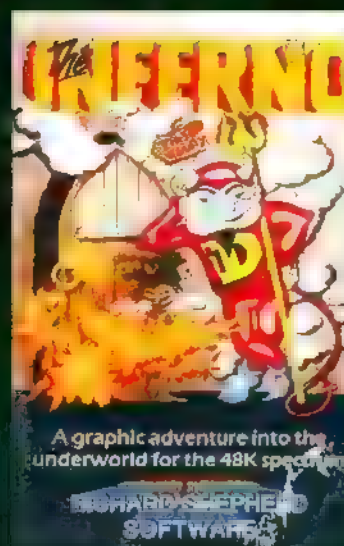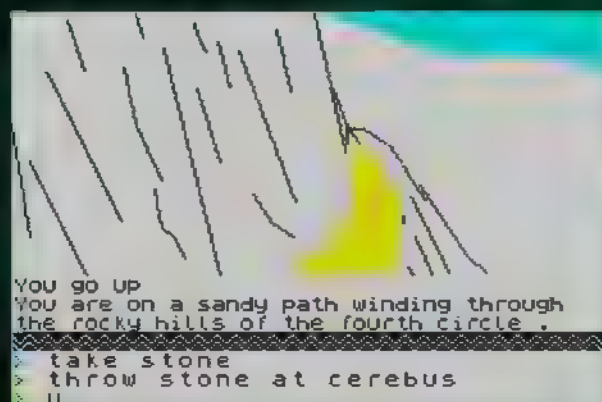
VAULT WALL (I had a staff with me), KICK WALL, FLY.. and many, many others. Next was to try and interact with the scenery. SWIM RIVER, DIVE, DRINK RIVER and eventually CROSS RIVER was the successful combination. I don't remember getting stuck at this point, so this was interesting but didn't make further playing an exciting prospect.

Eventually I got to the castle of judgement and was met by Minos. The room had one exit, and this led nowhere, so I was stuck trying to interact with this Minos dude.

Again, nothing happened with the usual stuff. THROW STAFF AT MINOS produced the response *Minos just laughs*.

Upon examining the bottle I discovered a small piece of paper in it. I tried to read this, and at this point the game responded by telling me Minos had let me past. Now I am not sure if the bit of paper helped here as the text scrolled off the screen, but at least I had moved on.


```
You go up
You are on a sandy path winding through
the rocky hills of the fourth circle .
> take stone
> throw stone at cerebus
> u
```

An empty plain was the next location, and a strong wind seemed to be holding me back. It seems the pattern for the game was to send you to a location and have you guess how to get out of it with very few clues. This for me is not really an ad-

venture, it's a 'guess the phrase' game.

Nothing I could do would let me move on, so with reluctance I looked online and found I had to CRAWL to get past the wind. So in hell, the wind only occurs a few feet above the ground, and you can totally get away from it by crawling!

By this time the game was starting to annoy me, and most of it so far, I did not recall. I just remember a totally different experience back when I played it for the first time. Maybe I have lost my rose tinted glasses?

The randomness of the solutions and the guessing took away that enjoyment for me, and it would have been far better to help the player by a simple change of location description.

Original: You are on a deserted plain, a howling wind is blowing to the south and you can see small specks that might be people fluttering above.

Suggested: You are on a deserted plain, a mysterious howling wind is blowing that seems to be at chest height to the south and you can see small specks that might be people fluttering above.

The inclusion of those few extra words would give the player a clue, and produce that head slapping moment when they solved it. Without that clue the player just sighs deeply with annoyance and wonders how the hell they would have guessed that! And no, you can't examine the wind. There is no clue what to do in this location!

I did play a little further, passing Cerebus and finding my path blocked by a boulder. I do remember this puzzle and it is fairly easy, but by this time I wanted to stop playing.

Adventure 1

Moving on then.. and to Advanture 1 from Abersoft. This is a version of the very first adventure game, and one of the first complete versions on any micro.

This is like easing on your favourite slippers and seeing all those long forgotten locations again. The well house, the grid, the low crawl, the bridge... ahhh the memories. Happy days, weeks and months I spent here, wondering around with excitement at this strange new world I had found myself in.

```
You are in a debris room filled
with stuff washed in from the
surface. A low wide passage with
cobbles becomes plugged with mud
and debris here ,but an awkward
canyon leads upward and west . A
note on the wall says 'Magic
word XYZY'.

About you can be seen

A three foot black rod with a
rusty star on the end
```

This game was just as I remembered it, but maybe because I am familiar with many of the puzzles and objects. Or is it that the puzzles are really logical rather than random verbs. Either way, this treasure hunting game was a joy to play again and I really wish I hadn't got rid of my original copy. I do have the Melbourne House re-release though, but it's not the same.

It's not all good though, and the maze of twisty little passages is never a welcome sight, but one that is needed to complete the game. I even remember some of the magic words that transport you back to the house.

I particularly liked the shadowy figure waving at you across a ravine. A mirror perhaps, or another lost but happy adventurer acknowledging a fellow player. You never get to find out, but I think this is one of the really good, but very minor things that help this game shine.

I don't want to pick holes in the game, but it's fair that some things are mentioned as I was harsh about Inferno.

There are, as the instructions tell you, locations where leaving to the South does not mean you can get back by going North again. There are locations that send you to different places when going in the same direction, so a map would only help some of the way.

I still have my original hand drawn map I made when I played this game and it's just a shame I don't have hours, weeks or months to really enjoy this game to the fullest.

The location descriptions are really well written, giving your mind something to work with producing exciting places to explore. The puzzles are mostly logical too, and the addition of secret words to avoid walking all the way back to the house is an excellent idea.

For example you will find a huge snake guarding an area quite early on in the game. It can't be killed and you really don't have any weapons anyway, apart from the axe if you had met the dwarf by this point.

You will have several items in your inventory; A rod, some keys, a flute, a lamp and if you are lucky, a cage containing a small singing bird.

```
You are at one end of a vast
hall stretching forward out of
sight to the west . There are
openings to either side .
Nearby, a wide stone staircase
leads downward. The hall is
filled with wisps of white mist
swaying to and fro almost as if
alive. A cold wind blows up the
staircase. There is a passage
at the top of a dome behind you.

About you can be seen

Rough stone steps leading up
```

Now, how to make the snake dozy enough to get past... maybe it needs a bit of charm. Toot toot. Get the idea?

This will make it sleepy, you then need something to scare it. Maybe another creature... a small one...

This puzzle took a while for me to work out because although the flute puzzle was logical, the final part wasn't, but you did get a clue. Releasing the bird before charming the snake gave a hint that you needed to do something else first.

Yes, I like this game. It's a fine version of the original and a challenge if you have the time.

First up this month is a rather nice game, Piranha. It's a kind of cross between Frogger and Glug Glug. You guide your diver down to the sea bed to collect treasure and have to get it back to the ship while avoiding giant piranha fish. A nice little game that's fun to play.

Next we have the reader's letter. Using a rather nice font and explaining why he designed it. He also asks that the magazine use more REM statements in their BASIC for other programmers to follow.

The editorial begins with an apology. A rogue OUT statement in the previous issues turned on the ZX Printer motor, spewing out loads of paper! They follow by announcing that the Spectrum is now officially the most popular micro in the world. Not sure how they came to that conclusion without checking America for example, where the C64 was a huge seller. They say that Sinclair has sold 1.1 million units, so I guess that would be in the UK.

Next we have a tape loading error. Yes, the file in the archives has an error stopping RESCODE loading. This though is a resistor identification utility.

The Long Way Home part 2 comes next and the serial adventure continues. It has the same slow parser but the game is fine for those who love to challenge their brains.

As always on side B, we have Of Dungeons and Green Men, the adventure section. This month Ship Of Doom from Artic Computing is looked at with some criticism levelled at the depiction of a 'little girl' character who you have to kill, a 'Never trust women' response and an "android girl" who doesn't seem to serve any purpose other than to carry out acts of a sexual nature.

The magazine does then go on to provide hints upon entry of Artic's post code though, for those looking for assistance.

Next we have Pontoon. Yes the age-old card games is here, and despite being written in BASIC, it plays quite well.

Book reviews are a new thing, and here we get tips on what to get if you want to learn machine code. Understanding Your Spectrum and Z80 Bible get a good mention. We then move onto reviews of four assemblers; Devpac, Zeus, Picturesque and DCP.

Instead of in depth reviews there are separate categories like editing or display, and recommendations for each.

Next up is that staple of BASIC game makers, the UDG Editor. There are many of these around and you can even write your own with enough knowledge. This one has the usual basic functions but is nothing special. No mirror or rotate for example, but a simple editor.

Next is a crossword. I did this live on my Patreon channel not so long ago and really enjoyed it. It was all Spectrum based and fun to do. Worth spending time on.

Need more characters per line, well 16/48 have the answer. Here they provide a 64-character machine code routine to help you use tiny letters. It could be useful for word processing, but not much use in normal games or type-ins.

Lastly we have this months competition. It's a sliding block puzzle where you have to complete the picture.
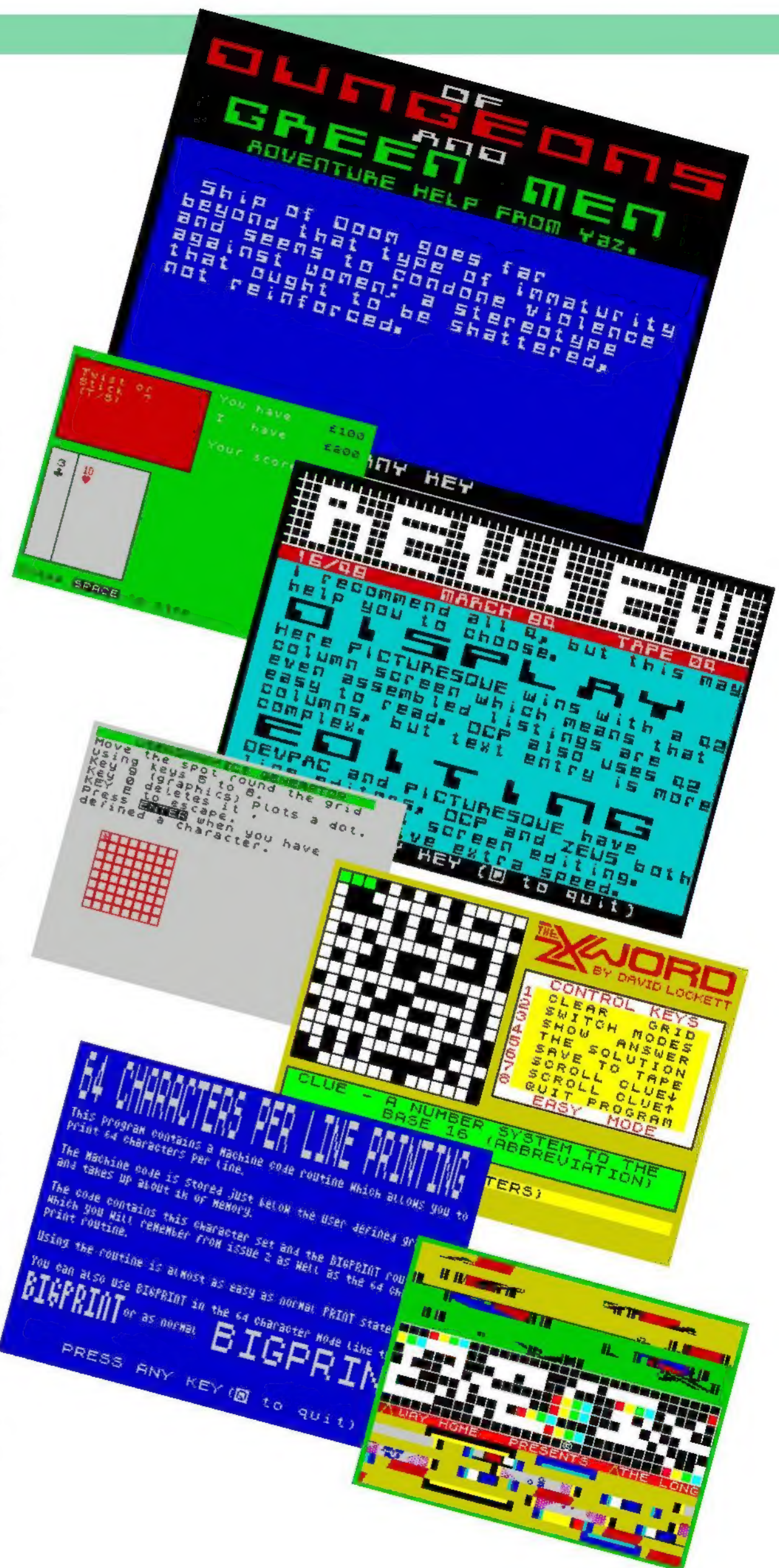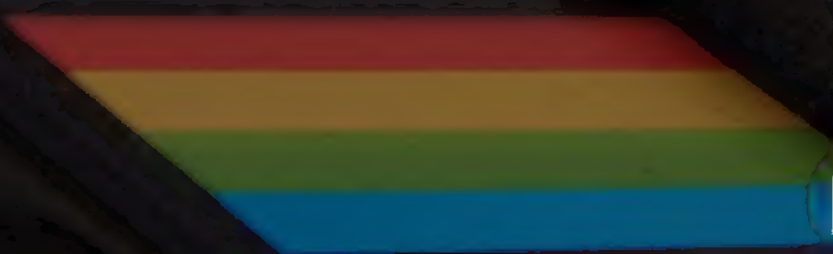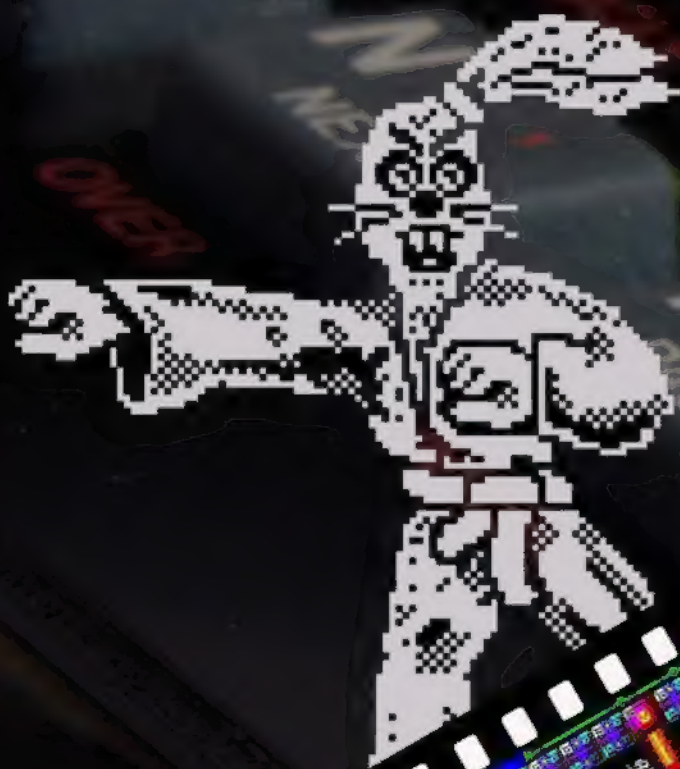
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